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PLAGUE

THE MENACE OF THE UNITED STATES OF AMERICA *

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The United States to-day is confronted with a problem of momentous import, and one whose very gravity should awaken the entire country, from north to south, east to west, to immediate action — the danger of plague invasion. Plague has manifested itself in Porto Rico, an American possession, and Cuba, an American dependency, two of the principal islands of the West Indies. No longer may we consider it a disease of only the Old World; it is, despite traditional epidemiologic cant, a disease of universal distribution, and as much at home in the Americas as in the Far East.

The idea of plague ever ravaging the Mississippi valley or sweeping the Atlantic seaboard of this country may be dismissed by some persons as an unfounded fancy. Notwithstanding the preponderance of belief to the contrary, it is my opinion that the sections of the United States above mentioned will yet have that problem for solution. This is a rather bold and, perhaps, somewhat alarming prophecy, and its fulfilment depends on the attitude which will be adopted by the constituted health authorities of the threatened coastal states and the working forces of the different health organizations of the national government. Plague on the eastern coast of the United States is, however, already a national health problem, and not a sectional one, as the presence of the disease was regarded when it made its appearance on the Pacific coast. In a measure, the appearance of plague on the western coast of the United States some years ago, though at all times and in all places the source of the greatest danger, was not then regarded by the country as a source of national danger by reason of the barrier interposed by the Rocky Mountains. The idea of the Rocky Mountains acting as a protective barrier and limiting the diffusion of this disease is an erroneous one and, for obvious reasons, should no longer be given serious consideration.

Owing to the importance of the subject, I believe a brief historical survey of the prevailing pandemic of the disease is not only timely but absolutely necessary to a proper appreciation of the future possibilities of the disease.

The fourth pandemic in the world's history began in 1894, and still prevails. From the recognized Chinese endemic center in the southwestern province of Yünnan, bordering on Thibet and Burma, plague spread to many other parts of China and to Formosa and Japan. It reached Bombay in 1896, and from that point spread throughout India, and, notwithstanding its sojourn of sixteen years, it shows little sign of declining. Jedda became infected in 1897, and again in 1899. In 1899 the disease made its appearance in Madagascar and Mauritius. A year later Mecca became infected, and it was also seen early this same year (1900) in the Transvaal, South Africa. Later, during the same year, it was noted among the dock laborers of Oporto, Portugal. The year 1899 has been, to date, the most eventful in the present pandemic of plague, as the disease appeared in widely separated spots and almost all over the world. In 1900 the disease obtained a footing on the western coast of the two Americas. To-day we admit its presence in South America, and at the same time are not overcertain of its absence from the Pacific coast of the United States. It can be readily seen, therefore, that the pandemic of 1894 is still existent, and its ravages not merely unchecked but in reality growing greater daily, as evidenced by the recent outbreaks in Porto Rico and Cuba.

The probable manner and means as to how plague gained a foothold in Porto Rico and Cuba, and what its presence in those countries means to the United States will be described in another part of this article.

It would be well at this juncture to consider some of the epidemiologic characteristics of the pandemic as it exists to-day.

The current pandemic is similar to those of the past in that the disease has advanced along the highways of commerce, save that its present distribution has been principally by sea routes in contradistinction to the overland routes of former ages. It has also demonstrated that plague can exist and become epidemic to the south of the equator and in the western hemisphere. In addition, it has proved that its limits are not necessarily marked by lines of latitude and longitude, nor by isotherms, and that once the infection is imported to any portion of the world it tends to become epidemic there if the local conditions are favorable.

Certain peculiarities of this pandemic are worthy of consideration, presaging, as they do, danger in the future. Principal among these are, first, a marked variation in the susceptibility of individuals, and, second, a like divergency in the malignancy of the disease in certain epidemic areas. These particular characteristics are dependent on certain conditions as yet undetermined, but there is ample evidence of their existence. A third interesting feature is its ease of transmission and great transportability through the medium of indirect, and also direct, infection. Another fact of significance, and, to my mind, the most dangerous, is the tendency of the disease to remain dormant in certain localities, only to recur and recrudesce sporadically. This apparent inabil-

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ity of plague to cause, in one place, a mighty epidemic, yet displaying also very extraordinary powers of recrudescence and exhibiting marked resistance to all known prophylactic measures, is highly dangerous, as it not unnaturally breeds contempt and inspires disregard as to the real latent force of the disease. To illustrate: The number of cases does not reach a stage when the situation might be termed really alarming. This fact, coupled with slow advancement and a low death-rate, accustoms the people to its presence, and the civic and health authorities are lulled into a sense of false security, and eventually come to regard it as a disease that can be kept within bounds without very strenuous efforts. During this period the disease insidiously implants itself over different parts of the country, establishing numerous foci of infection, only awaiting what may be termed the igniting spark for a monster explosion. In short, such are the peculiar characteristics of the present pandemic, which may later mean so much to us, and nowhere are these characteristics more vividly displayed than in South America. At the present time South America must be considered as the occidental distributing center of the disease.

It may be asked now, where is the source of our danger? Is our health imperiled from without or within? Is our danger close or distant? In answer to the first, as well as the second and third queries, our danger is without, and not within, our borders, and it is not distant but very close and really on top of us. The idea of our danger being a national one first received utterance from Dr. Donald H. Currie of the United States Public Health and Marine-Hospital Service, when he prophetically said: "The Mississippi valley might some day be infected with plague as a result of infected squirrels." Shortly after Dr. Currie's foreboding, Dr. Creighton Wellman, Director of the Department of Tropical Medicine of the Tulane University of Louisiana, made a similar prediction and explained in detail how certain breeds of ground animals had a biologic range from California into Alabama. Some months later, Dr. William H. Seemann, Professor of Tropical Diseases in the New Orleans Polyclinic, in a discussion relative to plague invasion, directed attention to the fact that freight trains of the various transcontinental and western trunk lines might during the grain-export season carry infected rats to the shipping points of the Atlantic and the Gulf. To a certain degree the conclusions of these keen observers are correct, but if the Mississippi valley or the central or eastern borders of this country are ever infected or should there occur a wholesale diffusion throughout the United States, irrespective of geographic limitations, the cause, I believe, will be through some port of the South Atlantic or Mexican Gulf; and more than probable the gateway of the infection will be New Orleans, Mobile or Galveston, in the order named. This matter will be considered fully in a later paragraph. Many believe that our only source of danger from without lies in direct communication with the now infected ports of the Far East — India, China and Japan — and that the probability will also be considerably heightened on the completion of the Panama Canal. That there is danger from these sources is not denied, but this is not our single source of danger. Our menace to-day, this very moment, is South America, the West Indies, Central America and Mexico. It is the existing infection in the American tropics which threatens our safety, and it behooves us to exercise the greatest caution in repelling the invasion of this travelling disease. The presence of plague in any one of the ports of the South Atlantic or the Gulf of Mexico would imperil the entire country. Thus, to-day we stand facing a problem the solution of which cannot in prudence be undertaken too early.

Let us review conditions as they actually exist.

The entire western coast line of South America is now infected. True, it only lies smoldering, awaiting the spark for a terrible explosion. On the eastern coast the infection is distributed in spots and does not follow a continuous line. How soon these spots may be connected in a chain of continuous infection we do not know. We do know, however, that from one of these infected spots plague travelled to Porto Rico and Cuba.

As to precise conditions prevailing in South America we are, in a measure uninformed, and this lack of knowledge constitutes an element of danger that cannot be overestimated.

In not one of these South American countries does there exist a properly constituted board of health as we understand such bodies. In addition, no reliable certification and recordation of deaths is enforced. Governmental authority relating to health measures is divided in such a manner as to render the service inefficient and confusing. The authorities apparently have not the constitutional power to enact or, at least, enforce such regulations as would tend to lessen the spread of disease and increase professional knowledge on the subject. In some cases there also prevails an appearance of great indifference as to whether or not disease exists.

There is a lack of cooperation between the state and local health officials of South America, and this lack of unity is greatly in evidence during the time of epidemics. Maritime sanitation by the health authorities of these countries is not only improperly conducted, but is, as well, a hindrance to commerce and a source of expense to ship-owners. A uniform international system of maritime sanitation and fumigation would prove of great benefit to shipping, and at the same time minimize the dangers of spread of the disease. The measures used in combating the plague are inadequate and antiquated.

As to the original source of infection on the western coast of South America but little is definitely known, though it is believed that commercial intercourse with India during the early days of the current pandemic is responsible for its presence. Some authorities are of the opinion that the infection might have been received from either Santos, Rio Janeiro or San Francisco. Shipping, both coastwise and foreign, is improperly supervised, and there are grave possibilities of the disease being brought unrecognized aboard ships.

When we consider the disseminative agencies of the disease, the character of the exports of these countries should also receive attention. The exports are hay, wool (vicuna, alpaca and sheep), dry salt hides, chinchilla (rodent) pelts, vegetables, wines, nitrates, copper and silver. In view of the great loss of life as suffered by China in the Manchurian district through trafficking in the pelts of infected marmots, it behooves us to exercise the greatest care in dealing with importations of chinchilla (rodent) pelts

A study of the types of the peoples on this infected coast offers sufficient explanation for the non-eradication of the disease. Social and economic conditions are not much better than those of the Far East. The educational and intellectual condition of the people is of a low order. This state of affairs may be attributed, in part, to the deadening and debasing effects of centuries of brutal bondage and political vicissitude. The most distinguishing trait in their character is their imperturbable

and incurable apathy. They are habitually slow in their movements and extremely indolent. They are timid, shy, secretive and superstitious. The policy of secrecy and denial is peculiar to tropical people, and nowhere is it better exemplified than in the South American. The love of intoxicating liquors is deeply rooted in their nature. Their dwelling places are nothing more than dark, ill-ventilated, one-story thatched huts, offering no defense from either wind or rain. One small room usually shelters the whole family; their bed is a sheep skin or two; their cooking facilities, one or two earthen pots and a rude oven built into the wall; their diet consists mainly of vegetables and corn products.

This is the state of affairs that exists on the eastern and western coasts of South America, but, fortunately, in the latter case, in a modified degree, owing to the civilizing and refining influences of European colonization. It need hardly be added that these remarks do not apply to capital cities such as Buenos Aires, Rio Janeiro and Valparaiso.

Next to be considered will be the relations enjoyed by the coastal cities and towns of South America with the West Indies. In this connection it might be interesting to speculate as to how plague really did reach Porto Rico and, later, Cuba.

It will be remembered that as far back as 1908 the Porto Rican authorities appealed to the federal government to protect the islands of Vieuques and Culebra, as they feared those islands would become infected through the bands of smugglers operating in this vicinity. Throughout the West Indies there exists what is known as a restricted or local coastal trade. This coastal trade, which is carried on principally by schooners and sailing vessels of light draft, has within the last few years outgrown its local character, and to-day this trade is carried on between the various islands. Between the larger islands there are intervening groups or rather a chain of very small islands, principally the Bahamas and the Lesser Antilles, and much trading is also carried on between these as well as the larger ones. On account of the very character of the trade, together with the type of vessels engaged therein and the lawless crews which man them, it is a matter of great difficulty to impose successfully the necessary health and quarantine regulations which are so essential in the prevention of disease importation. In fact, these craft, together with the crews employed, are a law unto themselves, and even the regulations which ordinarily govern things maritime hold no terrors for them. These small vessels, many of which are engaged in smuggling operations, ply between the different islands, touching, principally, at small coast towns—places where they are free from the scrutiny of the law and not subject to the restriction of quarantine and health measures. Whence these craft come and whither they go is the *crux* of the whole matter. In this form of contraband trading and commerce will probably be found the cause of plague introduction into Porto Rico and Cuba, the two largest islands of the West Indies. It is well known that a number of these craft make a regular business of carrying home the discharged or dissatisfied laborers of the Panama Canal. A certain percentage of the black labor employed in the digging of the canal, unable to stand the disciplinary measures of organization and influenced by inherent indolence, are continually being released. When we consider the roaming spirit of this class of people, who, after leaving the Canal Zone, wander aimlessly about the South American coast, minus the strong hand of their former health organization, it is small wonder that plague ingrafted itself on Porto Rican and Cuban soil. Many of these roving laborers, through their love of adventure, prompted by past experiences, seek new fields, and their ultimate goal in the majority of cases is the South American coast.

It will be remembered that, at the outset, attention was called to the existence of plague in spots on the eastern coast of South America, and how that country is regarded at the present time as the occidental distributing center of the disease. It is not only possible, but highly probable that the unlicensed trading and commercial relations of South American coast towns with the West Indies is responsible for plague leaving the mainland and appearing in the West Indies. Epidemiologists have expressed surprise that Porto Rico should have become infected with plague, owing to the efficiency of the health administration under American auspices. Through the able efforts of the Medical Department of the United States Army, Porto Rico approached the nearly ideal condition from a point of view of sanitation and cleanliness, and yet despite all precaution plague surreptitiously entered and remained concealed until the number of deaths converted doubt and suspicion into reality of their worst fears. It was plague.

The efficiency of the United States Public Health and Marine-Hospital Service and the Medical Department of the United States Army might be suggested in refutation of these statements, but the vigilance of these two organizations, together with the modern methods of maritime sanitation and fumigation and quarantine, is not in itself sufficient to prevent plague from being distributed throughout the West Indies, Central America, Mexico and eventually the United States.

Time certainly has not erased from memory the case of plague last January, which escaped detection for two days in Ancon, Canal Zone, the true nature of the disease being revealed only at autopsy in the Ancon hospital. Thus, we see with what ease plague made its appearance in the Canal Zone, where the best health organization in the world is acknowledged to reign. What untold damage one case of plague can do is only conjecturable. What connection this case of plague of six months ago in Panama had with the appearance of the disease in either Porto Rico or Cuba we are unable to state. If one case escaped detection, is it not possible for the same condition to repeat itself?

Despite the most extreme measures, in many instances plague has escaped detection at the hands of health officials and within a very short time assumed epidemic proportions. Granted that every facility be provided for the exclusion of plague, the impracticability of absolute prevention must, owing to the peculiar mode of transmission, appear evident.

Are these the only conditions favorable to the diffusion of plague throughout the American tropics? No! Decidedly, no!

The unstable condition of many of the Central American republics with the added evils of an ever changing political situation, together with constant revolutionary strife, is a permanent danger. At the present moment the revolution in Cuba is of great importance from the point of view of health to the United States. Plague made its appearance in Cuba shortly after the Porto Rican outbreak; and, on account of the unsettled state of affairs in that country, due to a desire to depose the present government, in which conflict there have been interjected bitter racial prejudices, the chances are that the disease will assume epidemic

proportions unless the most rigorous and drastic precautions are enforced. The frequency of revolutions of our South and Central American neighbors has given a decided impetus to the illicit schooner coastal traffic previously mentioned, and herein lies one of the greatest dangers. Again, just the same as in South America, cognizance must be taken of social and hygienic conditions in these islands—such as the preponderance of the black race, the percentage of illiteracy, the rate of illegitimacy, the rates of morbidity and mortality, and all the accompanying conditions that an almost submerged people bear. In discussing the appearance of plague in Cuba, sight must not be lost of the close and almost unrestricted relations that exist between the southern Floridian coasts and that island.

To appreciate how plague might secure a foothold in the eastern portion of the United States, it becomes necessary to consider the trade relations enjoyed by New Orleans, Mobile, Galveston, Pensacola, Key West and Tampa, in the order named. The sea trade of these cities is very large, and there is constant intercourse with Mexico, the Central American republics, Panama, West Indies and the northern and eastern ports of South America, and, in addition, indirect communication with the west coast of South America through the Isthmus of Panama Railway. In a lesser degree the following ports also enjoy trade relations as above described: Gulfport and Moss Point, Mississippi; Savannah, Charleston, Norfolk, Baltimore, Philadelphia, New York and Boston.

The prolonged struggle in Mexico between the federal forces and the revolutionists not only is a source of annoyance from the point of view of commerce and business, but also adds an element of danger in that plague might be unrecognized in that country, be carried across the Texas border and be rapidly diffused throughout that state and the central west by prairie dogs, rabbits and squirrels.

It is necessary at this point to digress and consider the position occupied by the Isthmus of Panama.

In reference to the Isthmus of Panama, it must be remembered that it occupies a unique position, in that it is one of constant exposure to many tropical diseases. The question as to the future of the Canal Zone itself, following the completion of the canal, is one of importance. Colonel Goethals, engineer-in-chief of this great undertaking, has suggested to the Isthmian Commission that the country contiguous to the great canal, except that portion required for the habitations of the military force necessary to its protection and the canal employees, be allowed to return to its pristine wildness. This suggestion is undoubtedly due to the fact that the completion of the Panama Canal means the abandonment of the great health organization which has maintained such a high standard of sanitation. The ports on the western coast of South America have been in constant communication with endemic plague centers for at least eight years. Each year the disease, in its insidious approach, creeps nearer. La Guayra, on the east, and Guayaquil, on the west coast of South America, both plague-infected, are only three days' journey from the isthmian ports and are in constant communication therewith. The Royal Mail Steamship Company, plying between infected ports of Venezuela, refuses to carry deck passengers to Colon, but allows first-class cabin passengers to embark for the same point. With this anomalous condition, can we keep Panama and the chain of Central American ports on the Atlantic side free from plague?

This question has been answered with the advent of plague in Porto Rico and Cuba.

To-day we have a widely advertised feature of travel, known as the sight-seeing of the canal, which is patronized by people from every section of the United States. When one remembers that these travelers coming from the United States must necessarily be thrown in contact with travelers coming from the plague ports of South America, it is not difficult to appreciate the ease with which plague may gain entrance into the United States. And it must be remembered that the bulk of travel from the isthmus is *viâ* New Orleans, and cases might get through, despite the most stringent precautions. The majority of the ships engaged in this trade are manned by Chinese crews, and, considering the receptivity of these people to a tropical infection, such as plague, they constitute an element of danger that cannot be easily waived. The vulnerability of New Orleans by sea invasion ought to be readily apparent.

The larger portion of the tropical trade enjoyed by the Atlantic and Gulf Ports is what is known as the "green fruit" trade. This industry is enormous and increasing daily. But here let me turn aside and pay a tribute to the principal corporation engaged in the "green fruit" trade, the United Fruit Company, American, for the adoption of a rigorous sanitary policy in dealing with all classes of tropical affections, special attention being given to the problems of plague and yellow fever. Through the general medical superintendent of the United Fruit Company, Dr. Robert Earl Swigart, stringent regulations dealing with ship sanitation and fumigation are enforced. Each ship of this company carries a well trained medical man, who is especially conversant with tropical conditions. In addition to caring for the welfare of the passengers entrusted to their care, the surgeons of the company are practiced in ship sanitation and fumigation. The rat-killing crusade as recently inaugurated by this company, under the supervisorship of Dr. Swigart, in ridding their tropical possessions, such as wharves, warehouses, plantations, and also ships, of rodents is really commendable and a deserved recognition of the value of that branch of latter-day science known as preventive medicine.

These, as briefly as could be stated, are the facts regarding our danger of plague infection from the American tropics. That they are serious is obvious, especially when we know that the type of plague prevailing in this section possesses to a high degree every characteristic of the present pandemic.

There are also in our midst certain dangers the prompt recognition of which will aid in minimizing any danger arising in the near future. It is not my purpose to burden this paper with facts of common knowledge, but a survey of actual conditions is necessary for the maintenance of this discussion. In the first place, many of the ports of the South-Atlantic and the Gulf have suffered in the past from outbreaks of epidemic infections, such as yellow fever, and to-day certain of them, such as New Orleans and Mobile, are the homes of many tropical diseases. Therefore, at the outset every southern port may be considered as a predisposed community to such a disease as plague.

With plague threatening the United States, especially the maritime cities of the southern and eastern coast, the time for action has arrived. To the south this warning should be shouted from every hill-top and go reverberating through every dale and valley, before it is too late.

The plague situation in the American tropics to-day is alarming. Despite its interest to the southern portion of the United States it has thus far been given but scant attention. The completion of the Panama Canal will increase the seriousness of the plague situation, but all thoughts of this are left unuttered in the hopes of the trade and commerce that will accrue to the south as a result of the completion of this great engineering feat. Material prosperity, however, invariably brings in its train evils of many descriptions. "Trade follows the flag," and "disease follows trade." To-day every southern port, and especially those of New Orleans and Mobile, is in close relationship with lands in which devastating epidemic diseases, particularly the plague, are rife. In the shipping cities of the south, health and disease-prevention seem to be ignored to a great extent and to be in subversion to trade interests. The lay press disregards the situation as much as possible, and in the laudatory articles dealing with the commercial upbuilding of this section of the country no mention is made of the menace of the disease. Plague, indeed, seems to be the skeleton at the feast.

The promotion of trade deserves encouragement, and material prosperity is doubtless a goal to be eagerly sought. But these will be dearly bought if at the same time plague is introduced.

The sanitary conditions of many of the cities of the south are truly deplorable. Conditions in New Orleans, Gulfport, Mobile, Pensacola, Tampa, Key West, Savannah and Charleston, unfortunately, are most favorable for the concealment and spread of plague. The combined population of the above ports is 601,568, of which number at least 269,000 are negroes. This large number of negroes, alone, presents a health problem of serious magnitude. While the negro does not participate in the civic life of the community, he is a factor of no small import in the social and economic affairs of the south. The mode of living among the negroes of the south violates almost absolutely modern sanitary regulations. Many of the whites of this region also approach the negro in the lack of personal hygiene and debasing influences and surroundings. And when we stop to consider that the percentage of illiteracy in the extreme southern and south-eastern part of the United States is the highest in the Union from a sectional point of view, it will be seen that the south has problems of immensity aside from possible plague invasion. In recent years there has also grown up throughout the south a very large Italian population, including many Sicilians. These people are but a few degrees removed from the negro, and in some instances worse, so far as personal hygiene and sanitary environments are concerned.

As it is to-day the southern United States has manifold medical problems which prevent that section progressing socially, politically and economically. The retarding effect on education and civilization of malaria, uncinariasis and pellagra are illustrative of what I mean.

The chief object in directing the attention to what may be termed a sectional or geographic predisposition to plague is to dispel that impression of safety—that belief of assurance—that plague cannot and never will reach our shores.

As to plague ever infecting the Mississippi Valley, the chances are not so remote as one would at first glance imagine. To my mind, the infection of the Mississippi Valley, if it occurs, will be brought about by the disease appearing in New Orleans and being transmitted up and down the river through the agency of the steamboat and the negro roustabout. This line of reasoning is based on the fact of the close proximity of the steamboat landing with that of wharves reserved for tropical steamers. Intercourse between the rodents of these two styles of craft will be difficult to prevent. Next to a granary, a steamboat acts as the ideal home for rodents. Infected rodents once gaining access to the steamboats will prove dangerous to the health of negro roustabouts. The negro roustabout, on account of his habits, would readily fall a victim to the disease, and, due to the migratory tendencies of this type of negro laborer, the disease will be spread far and wide.

What effect plague would have on such animals as the rabbit and squirrel, which are exceedingly numerous throughout the south, also remains to be seen. In the light of our present knowledge, an epizootic of plague among the squirrels and rabbits is not only possible, but extremely probable; and there is no use denying that they would spread infection far and wide, and especially among the negroes and poorer whites who live principally on these two animals when in season.

To-day the dock or harbor front of every port of the South-Atlantic and Gulf of Mexico presents a most inviting condition for the introduction and transmission of plague. The wooden docks and wharves of these ports are dangerous. From one end of these different ports to the other there stretch rows of wooden wharves, and all overrun with rodents. The method of discharging cargo and dunnaging in these ports is not at all proper. Cargo or freight should be placed above the ground, so as to prevent rodents from gaining access thereto in the easy manner now possible. Ships coming from tropical ports are not properly supervised by the health authorities. Ships on which rodents abound tie next to the wharves and, in seeking food, the rodents find their way ashore and mingle with the native rat. If the ship rat is infected, the natural results may be easily imagined. Extra precautions should be taken with ships engaged in the fruit, sugar and coffee trades and hailing from tropical ports. Ships' hawsers and cables are in no single instance or, indeed, very rarely protected by rat shields and trapping devices. Absolute safety demands nothing less than rat-proof landings, piers and wharves in every port on the Atlantic seaboard and Gulf coast.

Very close to the docks of these cities and within a stone's throw of the ships berthed to the wharves are located warehouses, freight depots, grain elevators, packing and cold storage plants, burlap and bag factories, cotton compresses, stave yards, stables and other industrial plants and institutions, all of which, it is safe to say, are overrun by rats. It has been shown that to gain access the ship rat has but a short distance to travel. It is here that the intermingling of the native and ship rats will play havoc. Many of the above buildings are old, and in many instances poorly constructed.

There also exists in connection with the industrial section, thus described, a condition peculiar to southern cities, and that is that the living districts—thickly populated—of the poorest and most illiterate type are hemmed in between these industrial sites. They are, to be exact, located, at intervals of five or six blocks, between the plants and establishments to which reference has been made. There also exist in these neighborhoods sailors' lodging and boarding houses and innumerable saloons and eating houses—many of the lowest grade. The larger proportion of the structures in these vicinities and the streets closely adjacent thereto are antiquated, dirty, in ill repair and devoid of all sanitary conveniences, and certainly must be considered as having some bearing on health problems. The average citizen has no

idea of the rat population of localities devoted to shipping.

The majority of the inhabitants of these sections are in some manner connected with the maritime trade of the ports—a phase of the question that is to be considered in discussing the transmission of plague, either by direct or indirect infection. The recreation and relaxation for these people, to a great extent, is found in spending the evenings by the wharves, and, in some instances, ship visiting. Accordingly, these localities—and there are others—may justly be considered predisposing to any type of disease which might arise. Were we to single out these centers, and from the point of view of sanitation and hygiene compare them to the other sections of the cities previously spoken of, the result would justify terming them the pathologic spots of the community.

Again, many of the cities of the South-Atlantic seaboard and Gulf coast are full of structures confined to no particular section, harboring rats underneath their wooden floors.

The rat-proofing of stables, restaurants, warehouses, grain elevators and residences for the various shipping centers of the south presents an appallingly large and complex problem. The experience of San Francisco, nevertheless, proves that it is feasible. The adoption of these measures alone will ensure to the south and the rest of the United States a reasonably permanent safeguard against the spread of plague, should it be introduced. A laboratory should also be equipped for examination of all rodents killed or found in the vicinity of the wharves and docks of the different ports. Without delay there should be established in every shipping center a non-infectible zone between the residential section of the city and water front. For the accomplishment of this drastic reform sanitary measures should be directed to the exclusion of rats from the wharves and first tiers of industrial blocks.

Earnest cooperation between the people and health authorities in the enforcing of all necessary health regulations should be secured. The attitude of the press toward radical, though absolutely necessary, health measures should be friendly, and not antagonistic or disparaging. The interests of the commercial organizations of the entire south must be aroused, and the fact must be impressed on them that discussion and truth as to sanitary shortcomings are better than the policy of concealment and silence often practiced in the past. The education of the people as a whole regarding the dangers of the rat should be conducted in the same manner as was the anti-mosquito campaign in New Orleans during the yellow fever epidemic of 1905.

The measures necessary to secure the desired results would be substantially as follows: The building laws of the various ports would have to be amended to provide that hereafter all structures should be made rat-proof—particular attention being given to the construction of floors and side walls and plumbing arrangements. Stables, private markets and places in which foodstuffs are kept should be given marked attention. Existing structures should be made rat-proof whenever deemed necessary, according to proper standards to be announced by health officials. Insanitary buildings or structures, or parts thereof, should be declared nuisances, and provisions made for the rectification of such conditions. Basements, back sheds and the open spaces beneath buildings should likewise be made rat-proof. Landlords should be made to realize that proper rat-proofing of their property is an investment which will greatly enhance realty values. If necessary, the rat must be "built" out of the maritime cities of the south by the use of concrete, brick and stone in the foundations and side walls of all buildings.

Adequate regulations concerning the collecting and disposal of garbage should be adopted. Householders should be required to keep garbage in metal receptacles and tightly closed. Street paving and cleaning should be brought up to the highest possible state of efficiency. Wooden bridges and crossings should be abolished.

The commercial and shipping interests should be taught that the inauguration of an anti-rat crusade would prove of considerable economic advantage, and in a short interval they would probably become the strongest supporters of the work.

All docks and wharves should be so protected as to prevent rats from gaining entrance to them, at either high or low stages of the water, from vessels berthed alongside such docks and wharves. Food products stored in docks or wharves should be so arranged as to make it impossible for rats to gain access thereto or come into contact therewith. The wooden docks as seen in New Orleans, Mobile and other ports are obsolete and form ideal harboring and breeding places for rats, opening avenues for infection from South or Central America, the West Indies or even the Orient. In regard to wooden docks and wharves the ports of the North Atlantic occupy the same position as New Orleans and the balance of the southern ports. The building of stone or concrete wharves is costly, but not prohibitive. Where possible, wharves should be protected from rats by fending vessels off shore. This should apply particularly to vessels from suspected ports. Hawsers and lines leading ashore should be protected by either rat shields or rat funnels. Ladders and gangways should be lifted at night, after the work of discharging is concluded for the day. As considerable difficulty would be experienced in wharf regulations, their enforcement would depend on competent policing.

The one thing for which the harbor or dock commissions of the interested municipalities should provide is a rat-killing brigade or corps whose duty would be to wage a constant war on rodents in and about wharves. In addition to their labors about the docks, they should also be sent aboard ship on arrival to rid it of rats. One of the interesting sights on arrival at the port of London is to observe the red-uniformed band of rat killers come aboard ship and commence their operations before the passengers have even disembarked.

In conclusion, I believe the time is ripe, indeed, that it is absolutely imperative, that a plague conference be held. This conference should be held in either New Orleans or Mobile, preferably the former, and should have for its objects the prevention of plague importation, the enactment of regulations looking to the wholesale extermination of the rat and the improved sanitation of all the southern ports. A uniform and efficient system of ship fumigation should also be discussed at this conference. The health officials of every southern state should be invited to participate. If possible, the conference should be held under federal auspices. In order that it prove a success the conference should be widely advertised and the aid of all trade organizations and commercial bodies be solicited.

It would ill become us to point the finger of scorn at other countries for neglect of modern methods of sanitation, while we continue to disregard similar precautions in our own ports. And finally, let the words of Emerson sink deep, "Obedience alone gives the right to command."

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THE NECESSITY FOR RODENT EXTERMINATION IN AMERICAN SEAPORTS *

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The rodent is the twentieth-century anachronism. He is as archaic as the neolithic midden to which he is coeval, and yet to-day we tolerate him, permit him to devastate our storehouses and to act as the intermediary vehicle for the transference of the organisms of disease between his loathsome carcass and the body of man. The toleration which we have shown for this inhabitant of the sewer and frequenter of the dump is perhaps due to the fact that man is by nature a lazy animal and will make no unnecessary effort unless spurred to it by some circumstance in his environment. It has been necessary for plague to ravage the world many times before man has learned well the lesson that the rat and his confrères, the mouse and the ground-squirrel, are among the most deadly animals with which he has to deal.

That rodents are the carriers of plague is too well known to merit more than a passing reference here. They are also afflicted with a leprosy-like disease which closely resembles, both in its etiologic factor and in its pathology, the leprosy of man. A number of other diseases exist commonly among them, the organisms of which are believed to be capable of producing human disease. They are also the hosts for a legion of entoparasites, while ectoparasites, such as fleas, lice and ticks, infest their hairy bodies. Furthermore, they are afflicted with new growths both of the benign and malignant types, and if we were to accept the parasitic theory as to the etiology of the latter, it might be that we would find that the rodent played a rôle in the dissemination of cancer.

The rat, then, is a menace to us physically. He also threatens us commercially. Traveling in the bodies of ships, and dogging the commercial highways of the world, he is the veritable "old man of the sea" whose appearance in the community is the sign of impending pestilence and the resultant commercial disaster. Plague is essentially a disease of commerce and not only does harm through the human sacrifices which it claims, but also because of the great fear it engenders levies a heavy commercial tribute. In addition to the depredations thus produced by this murine enemy, the mere item of subsistence alone is enough to warrant us in attempting the limitation of this species. A rat will consume approximately a bushel of grain in a year. If the cost of this be taken at $1, it can thus be seen that the community suffers an enormous loss in this way. But the depredations of rats are not confined to relatively cheap articles; the choicest fabrics and leathers, books and objects of art — none of these is spared; poultry and eggs, seeds and bulbs — all are destroyed by these vermin; and still the indictment against the rat is not complete unless we mention the many disastrous fires which have been caused by the rats' fondness for phosphorus which leads them to gnaw matches which have been carried to their nests. These are composed of dry and very inflammable material and are usually hidden in some secret labyrinth between floors and walls, and the fire reaches unquenchable proportions before its discovery. We must add to the charge of arson that of theft, for there are numerous instances on record in which rodents have carried away, for pure wantonness, jewelry and other articles of considerable value.

Aside from the extensive work which has been carried on in California, no effort of any magnitude has been made to check the inroads of these vermin or to determine whether or not they are infected with plague or some other disease which is pathogenic for man. It is a well-known fact that plague may smolder in a rodent community for a considerable time before accident brings about a closer contact between infected animals and man, thus giving rise to an epidemic. The effort of the sanitarian should be to discover the epizootic foci of the disease and to eradicate them before the opportunity for the transference of the disease to man occurs. It is equally important that the importation of rats, particularly infected rats, into a clean community, or the exportation of rats from a plague focus, be prevented.

The prerequisite to this is the trapping of rats, and it is the duty of every maritime city in this country to begin a sanitary survey of its rodent population. The methods for the trapping and examination of rats have been thoroughly discussed elsewhere[1] and it will be sufficient to indicate here that trapping, to be of value, should be systematic, that captured rodents should be carefully labeled, and that they should be examined by a competent bacteriologist. An accurate record of every rodent taken should be kept and the data obtained by such a survey should be intelligently tabulated. This is important for many reasons, not the least of which is the value of a record of the rat catch on premises on which it is desired to force sanitary improvements. No property owner was ever known to admit the presence of rodents on his premises, but confrontation with the register of the rats taken on his holdings is an unanswerable argument. Moreover, this is the preliminary step toward the securing of adequate ordinances bearing on the proper disposal of garbage and other wastes, the sanitary construction of stables and chicken-yards, the regulation of places in which foods are prepared, stored or sold, and the rat-proofing of buildings used for human occupation. It will thus be seen that the sanitary surveillance of the rodent population is the starting-point of a series of sanitary reforms which have a vital bearing on the public health. This is important, not only because of the security from plague secured thereby, but also because the measures which are directed against pest exert a preventive action against many other communicable diseases. Thus, it was observed that the plague-eradicative work in California was accompanied by a subsidence not only of plague but also of most of the acute infectious diseases both of man and of domestic animals.

Perhaps the most important single result of the attempt at the limitation of rodent activities is rat-proofing of buildings. This is a form of insurance — insurance against fire and pestilence. It is more than this, it is a plague-eradicative measure of the first magnitude, because it is axiomatic that he who dwelleth rat-free taketh no plague. The ideal agent to be used in this "building the rat out of existence" is concrete. Next to it in value come metal and other substances through which rats cannot pass. It should not be forgotten that the concreting of basements and the erec-

* Read in the Section on Preventive Medicine and Public Health of the American Medical Association, at the Sixty-Third Annual Session, held at Atlantic City, June, 1912.

1. The Rat and Its Relation to the Public Health, Pub. Health Bull. 30, U. S. Public Health and Marine-Hospital Service, Washington, Government Printing Office, 1910.

tion of area walls benefits the health of the householder by reason of the exclusion of dampness, and the removal of planked-over back yards and their replacement by cement makes for the general cleanliness of the premises. Permanent rat-proofing is therefore not an expense but a permanent health investment paying good dividends.

In this connection should be mentioned screening, because no matter how well the lower levels of a house may be fortified against rats, such efforts are nugatory unless the windows and other openings are screened. This means the exclusion not only of the rat but also of the fly and the mosquito, thereby affording protection against the diseases which these insects carry.

When we campaign against the rat, we not only destroy his abiding-place and exclude him from the home of man, but we also endeavor to separate him from his food-supply as well, because the famished rat does not linger. The point of attack is the garbage-can. This probably is the most misused of all the household utensils; hated by the housemaid, bumped and dented by the garbage-man, overturned by hungry cats and dogs, the receptacle for filth, and the begetter of noisome odors, it is at once a most useful and a most dangerous sanitary instrument. If we could ensure that every garbage-tin in a city was water-tight, well covered and maintained in a cleanly condition, we could feel a reasonable security from rats and flies. It is not enough, however, that garbage-cans be tight and clean; the collection and disposal of their contents requires careful supervision. This comprehends a study of the city's entire refuse-disposal system and if necessary its reorganization to meet the sanitary needs.

The stable, furnishing as it does both a harbor and a commissary for the rat, should receive careful attention. In the first place, let it be said that unless they are as carefully regulated and as cleanly administered as a human household, stables have no place in the scheme of the modern city. Thanks to the advent of the automobile and the motor-truck, the day is not far distant when the rat-infested, fly-breeding stable will have been relegated to the age of sanitary darkness. Stables to be rat-free should be rat-proofed by the installation of concrete floors; the manure should be kept in air-tight metal-lined boxes, and the stable itself should be screened and connected with the sewer.

The hungry and homeless rat may be poisoned with ease. This requires relatively little labor and every householder should be encouraged to poison the rats on his premises. Various agents have been employed for this purpose, but all things considered, phosphorus seems to be best for the purpose. It may be said in its favor that rats like it, that it is cheap and that it is certain in its action. The fact that it deteriorates on exposure to sunlight is not an unmixed evil, because if poison lies about for a considerable time it may be taken by some animal other than the rat. A very effective formula contains 4 per cent. of phosphorus in a glucose base. Rat-poisoning is a duty too frequently overlooked, and we shall do well to follow the example of our European cousins, and institute rodent extermination campaigns in all our large cities.

We have thus seen into what a varied field of public health activity the efforts at rodent extermination logically lead us. Supposing, that in our examination of the captured rodents we uncover a plague focus, what will be our method of procedure? In the first place we have, so to speak, the "choice of position," which is no mean advantage. We can strike before the epizootic becomes an epidemic and we can strike so quietly and so surely that no disastrous result need come to commerce. In this lies the great argument for rodent exterminative work in cities in which plague is not known at present to exist or in which plague has never been found. Plague has left its spoor at almost every junction of the trails of trade, yet it has not been recognized until it has signalized itself by the occurrence of human cases. Who can doubt that if the rats of the great seaports of the world were examined, the infection would be found in many cities heretofore considered plague-free? And who can controvert the statement that if the infection is recognized now and promptly up-rooted many lives and millions of money can be saved?

The first thing to be done on the discovery of a plague focus is to wipe it out. In order to wipe out a plague focus it is necessary to kill the rats therein. It is impossible by any single known method to accomplish this. Hence, reliance must be placed on a combination of methods which will attack the rat along every avenue of his existence. There is more to this than the mere killing off of the rat, because when an attack is made on any species which lives in more or less close proximity to man, there is a coincident improvement in the environment in which man lives, and hence there is a decided falling off of the diseases which are essentially environmental in character. Rats may be killed by starvation, prevention of multiplication, eviction, poisoning, trapping and the employment of natural enemies, such as the dog or the cat. The technic of these methods has been discussed elsewhere, and it need be only mentioned here. The reduction of the rodent population in an infected zone is in reality a question of dilution of the infectable material, and even though the rats which remain have a better opportunity for securing food than they had previously, the fact that they are widely separate from one another causes the disease to die out among them.

Since plague is a disease of commerce, and since plague is a disease of rats, and since rats journey over the world in ships, it is the duty of persons who are charged with the protection of the health of marine ports, to kill rats in ships. This is best done by periodic fumigation, either by sulphur dioxid gas, carbon dioxid, carbon monoxid or funnel gases. This is cheaply and easily done, and if these remedies were periodically applied at all of the ports of the world, it would not be very long before the disease ceased to follow the track charts of marine commerce. In order to secure such action, it would be necessary for the powers of the world to enter into an international sanitary agreement. This would entail considerable labor and expense, but if it were accomplished, it would prove a measure of great good. Couple this with the extermination of rodents in seaports and plague would soon be relegated to the museum of paleolithic sanitation.

Sanitary Milking.—A Florida inventor (*Scientific American*, May 25, 1912) has come forward with an appliance in the form of a screen to be used during hand milking. It consists in a vertical partition interposed between the cow and the milker with a large opening in which is fitted a flexible screen made of rubber, skin or fabric, having holes for the insertion of the cow's teats. This is so applied as completely to exclude foreign substances from the milk-pail. This appliance requires that each cow be taken to the structure provided with the screen and confined there while being milked, the milker being in an adjoining apartment and not in contact with the cow. Though a little more trouble than the ordinary method, this would seem to be an admirable arrangement hygienically, but large dairies would require a number of these appliances.

FURTHER EXPERIENCE WITH ANEURYSMORRHAPHY (MATAS)

A REPORT OF EIGHT CASES *

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The year 1902 marks the beginning of a new epoch in the treatment of aneurysms for it was at this time that Matas presented to us a description of what is now generally called the Matas operation and reported four cases on which he had successfully operated.

This presentation was made before the American Surgical Association.[1] The account of his first case, one of aneurysm of the brachial artery, is extremely interesting as it shows how the idea originated of curing the aneurysm by suture from within the sac of all arterial openings. In this case several of the older methods of compression had failed, later ligation after the manner of Anel failed and still later distal ligation failed. Matas then opened the sac and discovered that the failure of the previous ligations was due to the entrance of blood into the sac through one or two large collaterals. The openings of these vessels were sutured and it was found on removing the tourniquet that no blood flowed into the sac. The sac was then packed and the patient recovered. This first operation was done in March, 1888, and was briefly reported,[2] but apparently attracted little attention.

Since the publication of Matas' notable paper, 1903, he has been able to collect nearly 200 cases in which operation was performed after the method he described. This operation has already supplanted, in this country at least, all the older methods of operative treatment. Although one would prefer to draw conclusions from a perusal of all these collected cases, my own experience in eight cases, I trust, will be considered sufficient warrant for a discussion of the merits of the operation, though it is hard to imagine a surgeon who could now doubt that this procedure has rendered the operations of ligation obsolete except in cases of aneurysm of the small arteries and in those in which the proximal control of circulation cannot be had and in which the distal ligation is indicated.

My first patient[3] was operated on in October, 1904; my second case[4] was operated on in November, 1906; my last six cases are added now and the total of eight represents my experience.

CASE REPORTS

CASE 1.—Negro, male, aged 31, was operated on Sept. 27, 1904, Pennsylvania Hospital, for a large aneurysm involving the popliteal artery and causing marked edema of the leg. Syphilitic infection was denied and the condition attributed to a blow by a stick, which was received eight or nine months previous. Circulation of the leg was controlled by an Esmarch constrictor, the sac opened, the contents evacuated and the obliterative type of aneurysmorrhaphy done. A superficial infection occurred. The patient took large doses of iodid after the operation and made a good recovery. Examination three years later showed no recurrence and a report, received within a week, shows the patient to be perfectly well.

CASE 2.—Physician, aged 57, operated on Nov. 24, 1906, Bryn Mawr Hospital, was suffering from marked Bright's disease; the vessels were very atheromatous and the heart showed distinct valvular disease. There was no history of syphilis. The patient was given large doses of iodid for some time before operation. The pain and suffering from the aneurysm were very great. Because of the patient's bad general condition operation was done largely under infiltration anesthesia. Ether became necessary after the evacuation of the sac because it was necessary to extend the leg in order to gain access to the arterial openings; this extension was too painful for the patient to bear. The circulation was controlled by an Esmarch constrictor, the arterial openings sutured, the sac partially obliterated and packed. The patient made a good recovery, was relieved entirely of his pain but died two months after the operation from uremia. The wound had healed except for a small superficial area. At the time of his death there was no edema of the leg, no evidence of a recurrence of the aneurysm and there was complete relief from pain.

CASE 3.—Negro, male, aged 38, was operated on Nov. 27, 1907, Pennsylvania Hospital, for large aneurysm of the femoral artery in the lower portion of Scarpa's triangle. No distinct syphilitic history could be obtained and the patient was unable to take large doses of the iodid. After a week's rest in bed and the continuous application of an ice-bag the aneurysm became somewhat smaller. The circulation in this case was controlled by digital compression after exposing the vessel just below Poupart's ligament. This was done by Dr. W. E. Lee. The sac was opened and evacuated but there was considerable bleeding due to the establishment of a good collateral circulation. The arterial openings were soon found and closed. The openings of the femoral artery were about 2 inches apart on the same plane and quite accessible. This, I thought, was a good case for a reconstructive operation, but as the obliterative operation gave better prospects of a cure and as the collateral circulation was good, this operation was chosen. The sac in this case was completely obliterated by six rows of continuous sutures and a small gauze drain was inserted under the skin. Some superficial infection occurred. The patient was discharged with the wound healed Jan. 3, 1908. A letter received from him during the past week states that he is perfectly well and has no trouble whatever with the leg.

CASE 4.—White man, aged 44, was operated on Dec. 7, 1907, Jefferson Hospital, for large aneurysm of the lower portion of the femoral artery, the result of a gun-shot wound received twenty-four years previously. A 32-caliber bullet entered the thigh 3 or 4 inches above the joint on the outer side and passed out just above the internal condyle. After the injury there was persistent edema of the leg and varicose veins developed. Eight months prior to operation he first noticed a swelling low down on the inner side of the thigh; this rapidly increased and the edema of the leg disappeared. The aneurysm was a very diffuse one and resembled a sarcoma in appearance. Expansile pulsation and characteristic bruit, however, showed the true nature of the condition. The tumor involved the posterior and both lateral aspects of the thigh above the knee and extended up to the middle of the thigh. The patient when first seen, about a month prior to operation, would not come into the hospital and when he was admitted it was noticed that the pulsation was not so marked and that the tumor was larger. The *x*-ray plate showed the bone to be normal excepting for a little spicule projecting from a point just above the internal condyle. There were other small shadows of bone and bullet standing off about an inch or two from the bone. My own feeling was that there had been an aneurysm, due to an injury of the femoral artery in Hunter's canal, that this while it existed caused pressure on the vein and edema of the leg, that a slow rupture occurred with the development of a large false aneurysm relieving the pressure on the vein and causing the edema of the leg to disappear. I exhibited the patient at the Philadelphia Academy of Surgery a few days before the operation. At that time there was no pulsation to be felt in the tumor generally but only along the inner side of the thigh and in an area about an inch in width. I endeavored to get permission for amputation in case the condition proved to be sarcoma, but this the patient declined. Circulation was controlled by an Esmarch constrictor and the mass exposed through an incision made in the posterior aspect of the leg and a little to the inner side of the median line. I

* Read in the Section on Surgery of the American Medical Association, at the Sixty-Third Annual Session, held at Atlantic City, June, 1912.

1. Matas: Report and Discussion, Tr. Am. Surg. Assn., 1902. A full description of the method, but without the case histories, was later published (Ann. Surg., February, 1903).
2. Matas: Med. News, Philadelphia, Oct. 27, 1888.
3. Gibbon: Am. Med., Aug. 19, 1905.
4. Gibbon: Ann. Surg., September, 1907.

expected by this incision to determine the nature of the tumor and evacuate the clot in case it were an aneurysm, and then I expected I would have to make another incision on the inner side anteriorly in order to get at the vessel where it was injured. I evacuated about two quarts of clot of varying consistency, most of it like molder's clay; I then found that there had been an injury of the femoral artery in Hunter's canal. The sac of the true aneurysm was quite small. There was an opening in the vessel probably ¾ inch long and wedged in the vessel wall were a number of pieces of bone which had been carried away from the supracondyloid ridge by the bullet. The vein lay in close contact with the artery and it was with difficulty that I could close the opening without injuring the vein. On account of the injury of the vessel wall by the small pieces of bone I did not attempt to do a reconstructive operation, but completely obliterated the vessel with a single row of sutures. Because of the position of the vein and the fear of injuring it, I did not obliterate the sac very closely. I put in, however, two rows of sutures and carried a gauze drain down to my original suture of the vessel. There was no bleeding after I put in my first row of sutures, when the constriction was removed. The patient made an excellent recovery, the wound healing promptly by granulation. A letter a few days ago from the patient's wife states that he died Feb. 10, 1911, from tuberculosis. She said, "His leg gave him no bother and was not the cause of his death; in fact the operation for aneurysm was entirely successful." Death occurred three years and three months after operation.

CASE 5.—White man, aged 45, was operated on Sept. 13, 1908, Jefferson Hospital, for aneurysm of the abdominal aorta, incomplete operation. I saw this patient in the service of Dr. J. C. Wilson. He had been admitted twenty-four hours previously suffering apparently from a ruptured abdominal aneurysm. Temperature was subnormal and he was sweating and in collapse. He braced up and got in fairly good condition. In the twenty-four hours he was in the hospital he secreted but two ounces of urine and had persistent vomiting. Examination showed a large pulsating tumor in the left upper quadrant of the abdomen. Some years previously he had had a fall and had passed urine containing blood. I thought probably the aneurysm might be of the renal artery and because of the evidences of bleeding on the day before that it had probably ruptured, making a large false sac. There was no difference in the pulsations of the two femorals as shown by tracings. His vessels did not seem to be atheromatous and it looked like a case for which something might be done. The tumor appeared too low for an aneurysm of the celiac axis and I hoped that it might prove to be a sacciform aneurysm and that the Matas operation might be performed successfully. After the situation was carefully explained to the patient and to his family consent for the operation was given. The complete suppression of urine and the obstruction of the bowels rendered his condition very serious. The abdomen was opened in the median line from the ensiform to about 1 inch below the umbilicus. On pushing the intestines to the right we found an enormous aneurysm covering the kidney and extending down behind the peritoneum nearly to the pelvic brim. There was some extravasation of blood outside the sac but not so much as I had expected to find. There was also some blood in the peritoneal cavity but not enough to amount to anything. After considerable manipulation and examination we concluded that the aneurysm was of the aorta and it seemed to be fusiform in character. With difficulty we managed to get a rubber catheter around the artery above the aneurysm and thus to control the circulation. The patient's condition by this time was very bad, but we were still not sure that the aneurysm was not sacciform and that something might be done to cure it, and therefore made a small opening in the sac and explored it. We found a fusiform aneurysm about 4 inches in length and extending down to the bifurcation of the artery. At the bifurcation there were a number of calcareous plaques in the wall of the vessel. The patient's condition was desperate at this time and it was a question whether we should leave him with simply a ligature around the artery or whether we should try to close the openings in the sac. We finally determined on the latter procedure and put in two rows of sutures completely closing the upper opening and one row below. The patient was dying when this was done so that the operation was not completed. He died on the table.

(On March 6, 1909, I exposed another aneurysm of the abdominal aorta hoping to be able to do some type of aneurysmorrhaphy but found two aneurysms, one involving the upper portion and one the lower portion of the abdominal aorta and separated by only a small portion of healthy vessel. No operation was attempted.)

CASE 6.—White man, aged 46, was operated on Jan. 11, 1911, Pennsylvania Hospital, for popliteal aneurysm; obliterative aneurysmorrhaphy was done. Syphilitic history was denied. The aneurysm was very large and extended over both lateral aspects of the femur. The pulsation in the aneurysm was peculiar and suggested pulsus alternans. An Esmarch constrictor was applied and the aneurysm exposed through a median incision. The external peroneal nerve passed across the sac and was displaced downward without injury. The sac was opened throughout its length and a large quantity of clot in various stages of organization was removed. The aneurysm was distinctly fusiform. The openings of the main vessels were occluded with interrupted sutures of linen thread. When the tourniquet was loosened there was no bleeding from collaterals. There was a pocket in the sac on each side of the bone which I found difficult of access, but I was able finally to obliterate the sac entirely with several rows of continuous sutures. The skin wound was approximated excepting where a small rubber-covered drain was placed. There was never any marked infection in this case and yet some discharge kept up for a number of weeks until a linen suture was removed when the wound closed. The patient made an excellent recovery and when seen a few weeks ago by one of the interns there was no swelling of the leg, no interference with function and no recurrence of the aneurysm.

CASE 7.—White man, aged 36, was operated on July 12, 1911, Jefferson Hospital, for aneurysm of the femoral and external iliac arteries; obliterative aneurysmorrhaphy was done. This patient was a healthy-looking, well-developed and intelligent man. He gave a pretty significant history of specific infection some years ago. He was admitted to the hospital two weeks previous to operation with a large aneurysm involving the femoral artery and extending well to the outer side of the thigh. I did not think at the time that it extended above Poupart's ligament. He had a great deal of pain which disturbed his nights very much. Although the whole thigh was swollen there was little edema of the foot and leg. He was put to bed, given large doses of iodid and an ice-bag applied. After admission the aneurysm increased in size and the pain did not diminish. The abdomen was first opened through the sheath of the right rectus and exploration showed that the external iliac was involved for about 1 inch and that the aneurysm extended up behind this vessel for about 2 inches. Dr. Despard compressed with his finger the common iliac through the abdominal wound and I laid the aneurysm open from one end to the other. The bleeding at first was very profuse but seemed to consist largely of the blood in the aneurysmal sac. The proximal opening was quite superficial and was closed with catgut sutures as were also one or two small openings in the sac. The sac was then obliterated with rows of catgut sutures. In order to reach the lateral aspect of the sac I was obliged to carry a transverse incision across the thigh. The wound was closed excepting for a small superficial rubber-covered gauze drain. This wound healed promptly and the patient made a good recovery. A letter written by the patient March 3, 1912, states that he is in splendid condition and free from any trouble in the leg. The patient is actively engaged in work in the Philippine Islands.

CASE 8.—Negro man, aged 36, was operated on June 1, 1912, Jefferson Hospital, for popliteal aneurysm; obliterative aneurysmorrhaphy was done. He died on the table at the conclusion of the operation; probably an anesthetic death. This man denied syphilitic infection. The aneurysm was first noticed a few months previously. There was little edema of the leg and the pain was not great. The patient was apparently in good condition. Prior to the operation he was kept in bed for ten days, given large doses of iodid and an ice-bag applied

over the aneurysm. No lesion of the heart, lungs or kidneys was found. Thirty minutes before the operation he was given a hypodermic of ¼ grain morphin and 1/150 grain atropin. He was anesthetized with chlorid of ethyl, followed by ether. The circulation was controlled with an Esmarch constrictor. The aneurysm was about the size of a lemon and was nearly filled with organized clot. The arterial openings were readily found and closed with catgut. The sac was easily obliterated by three rows of sutures. The wound was closed without drainage. This was the easiest and most satisfactory operation for aneurysm in all of the series. While I was closing the skin and the intern was excising a small fibroma on the patient's arm the anesthetist announced that the patient was not breathing and that his pulse could not be felt. The change in his condition was very sudden as the pulsation of the popliteal could be distinctly seen while I was closing the overlying tissues. Artificial respiration was kept up for about half an hour and for a time the radial pulse could be distinctly felt, but in spite of all our efforts the patient died. An autopsy was made and excepting for some atheroma of the thoracic aorta no lesion was discovered.

SUMMARY

It may be observed from the foregoing histories that I have had two deaths, one directly attributable to an attempt to cure by the Matas operation an aneurysm of the abdominal aorta and the other presumably an anesthetic death after the conclusion of the operation. In the first case it may be that I should not have attempted the operation and my only excuse is that a fatal termination was inevitable without it. My belief was, and still is, that the operation of aneurysmorrhaphy can and will be successfully performed in aneurysms of the abdominal aorta.

One can hardly consider the wonderful work in arterial surgery which has been done on animals, notably by Carrel, without hoping and believing that equally remarkable work will soon be accomplished in man. The cure of aneurysm of the abdominal aorta may not be brought about by exactly the same method as that applied in the case of other accessible arteries, but I am confident that it will come, it may be by some method of improving the collateral circulation before attacking the aneurysm, or possibly by the resection of the diseased portion of the artery and the substitution of another healthy one, probably a "cold-storage" specimen — such an operation as Carrel has done so successfully in dogs.

My second death, that which occurred in my last case, is the only distressing experience I have had and I am sure that those who have had a patient die suddenly and unaccountably at the conclusion of a perfectly simple and satisfactory operation will agree that the death is not attributable, in any way, to the type or character of the operation; it certainly was not in this instance as the autopsy showed.

Of the six remaining patients one (Case 2) died two months after the operation of uremia, having had Bright's disease at the time of the operation. Another patient (Case 4) died more than three years after the operation of tuberculosis without a recurrence of the aneurysm. The other four have been heard from or examined within a few weeks and all remain cured.

It is unnecessary to go minutely into the details of aneurysmorrhaphy, but I should like to discuss a few aspects of the subject.

In the first place, I consider the control of the circulation while the operation is being done one of the most important steps of the procedure. Matas in his first communication advised the Esmarch constrictor when it could be used and when it was inapplicable a protected clamp with a screw to regulate the pressure, such as that devised by Crile, or a tractor of silk passed around the vessel. In most of my own cases I have used the elastic constrictor of Esmarch. In the case of aneurysm involving the femoral and external iliac direct digital compression of the common iliac by an assistant through an incision in the abdominal wall was employed. In Case 3 the femoral was controlled by direct digital compression. In the aneurysm of the abdominal aorta constriction was obtained by a rubber catheter.

Speaking generally, the Esmarch constrictor is the safest and most satisfactory method of control. Direct digital compression, through a separate incision if necessary, is the next best method and can be easily accomplished by an intelligent assistant. The force required is not great and the time of its duration is not long. The rubber-covered clamp of Crile with the regulating screw is perfectly safe and satisfactory and if employed intelligently can do no harm. Too long or too great pressure with any clamp may, however, seriously injure the vessel and excite thrombosis or so weaken the diseased artery as to render a second aneurysm at the site of its application likely. Any form of temporary ligature, I believe, is dangerous for the same reasons and should never be employed. I am inclined to think that this applies to the tractor of silk or any other material. Such control of the circulation may be permissible in a healthy vessel but except in a traumatic aneurysm the vessel can hardly be considered healthy. In one recorded case of popliteal aneurysm a temporary ligature was applied to the femoral artery and another aneurysm developed at the site of its application and later necessitated an amputation of the leg. Personally, I prefer, when the Esmarch constrictor cannot be employed, to expose the vessel well above the aneurysm through a separate incision if necessary, and have an assistant compress it with his fingers during the time the sac is being opened and evacuated and the arterial openings sutured. I have employed this method of circulatory control a number of times in amputations of the thigh and hip and like it.

Another important point for discussion arises after the aneurysmal sac has been emptied and examined, namely, the selection of the type of operation best suited to the case. There can, I believe, be little doubt that in the large majority of instances the "obliterative" operation will be found the simplest and safest. In the case of sacciform aneurysm the simple closure of the communication with the vessel, what Matas calls the "restorative" operation, should be the one of choice. From reading the accounts of cases reported in the literature I am inclined to think that the "reconstructive" operation carries with it considerable risk of thrombosis and a greater likelihood of a recurrence. Certainly the operation requires more skill and a fair amount of experience in arterial surgery. In the popliteal, the femoral, the brachial and the external carotid I believe the "obliterative" operation is preferable.

I have used both catgut and linen thread in my cases and the results have been as good with the latter as with the former and I have therefore given it the preference. It will be noted that in one of my cases a sinus discharged until one of the linen sutures was removed. Because of the tendency to infection, especially in syphilitic cases, I believe a superficial drain is advisable.

In conclusion, too much stress cannot be laid on the importance of preliminary and postoperative antisyphilitic treatment when there is a history of such infection or when it is suspected.

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ABSTRACT OF DISCUSSION

DR. CHARLES A. POWERS, Denver: This is one of the most interesting and most valuable procedures in surgery. I am in accord with everything that Dr. Gibbon said. My personal experience has been very much less than his. It is limited to two cases of obliterative endoaneurysmorrhaphy, each done in the case of a popliteal aneurysm, and an additional case in which I was merely a consultant, however, through the kindness of Major Clyde Ford, of the Medical Corps of the United States Army. My two patients made a simple and prompt recovery. In this connection I feel with Dr. Gibbon that the elastic constrictor will probably prove the best method of controlling hemorrhage. I shall speak very briefly of a third case, Major Ford's patient, which was one of reconstructive endoaneurysmorrhaphy. Nov. 22, 1910, a soldier was accidentally shot through the thigh, the bullet entering over the middle of Hunter's canal, and coming out at a point somewhat above on the outer side of the thigh. The immediate hemorrhage was controlled by a comrade, and there was but little bleeding when the patient was seen by the post surgeon. There was firm healing afterward. Feb. 4, 1911, or nearly three months afterward, the soldier applied to the post surgeon for advice regarding a pulsating tumor at Hunter's canal. There was a plainly marked sacculated aneurysm about the size of an average man's fist. Major Ford performed in a very thorough and skilful way the reconstructive operation, and I am free to say that I was very much impressed with the beauty and the result of the operation. The suture was made with fair ease, and when the Esmarch constrictor was taken off at the conclusion of the sac suture, there was no bleeding, but there was a definite clear pulsation in both the anterior and the posterior tibial arteries. I was very much impressed by that. There was, however, a persistence of a very definite thrill. This thrill was present before the operation and I fear it has persisted until this day, showing, in the judgment of Major Ford, that there existed a communication between the artery and the vein. Evidently the bullet made a small wound in the artery and vein and while there has been no return of the aneurysm, the communication between the artery and vein has persisted. It is now sixteen months since the operation and I understand that the patient is in very good condition. There is a slight edema of the leg, but no pain, and the man is able to work.

Major Ford told me that he wrote to Dr. Matas, in New Orleans, regarding this arteriovenous communication, and it was Dr. Matas' judgment that in such a case, where the symptoms were very slight and the disability not marked. it was best to let the vessels remain as they are, and not attempt any further reconstruction.

It has seemed to me that this procedure of Dr. Matas', as has been so well said by Dr. Gibbon, is one of the most valuable additions to our research made in many years.

DR. J. F. BINNIE, Kansas City, Mo.: I think the obliterative operation in suitable cases is the operation of choice. Anyone who has attempted the operation knows how ridiculously easy it is, at least in the extremities. A child could almost perform it. The only thing to do is to put on the elastic bandage, cut into the aneurysm, take out the clot, do not be afraid of doing that thoroughly, and sew up the hole from the bottom up. It is a thoroughly good operation. What a difference between that and trying to dissect out the aneurysm. One gives as good and as permanent a result as the other, but dissecting out the aneurysm is a heavy and dangerous operation. I have tried reconstructive aneurysmorrhaphy on more than one occasion and my work has been foredoomed to failure. Why? I forgot entirely that if you keep your eye open for a long period of time you get conjunctivitis. If you had your eye washed with salt solution or covered with sterile petrolatum, you would not be likely to get conjunctivitis, the reason being that the eye open dries and you will get an inflammation from the drying without any infection with bacteria. Exactly the same thing will take place on the inside of an artery. If you expose that to the air and let it dry, you will have an inflammation. I did not use any precautions, for example, smearing with petrolatum as Carrel does. I used the material which Matas recommended, catgut, for sewing up the vessel, and if there is anything that will produce an irritation in the intima of a blood-vessel, catgut will do it. My operations were most of them successful as regards curing the aneurysm, but not in a reconstructive sense, as the vessel closed afterward.

MAJOR CLYDE FORD, U. S. Army: I do not know that I can add anything to what Dr. Powers has said of my operation. I at least have the satisfaction of being able to report 100 per cent. of recoveries—because I have had only the one case. I am glad to be in Dr. Binnie's class under any circumstances, and I may claim to be in it because I use chromicized catgut and have no trouble. There is some little notability in my relation to this case, in that I was associated with it from the beginning to the end. There was no doubt about the diagnosis or the process of development. With regard to the thrill which persisted after operation, and, as I am informed, persists to this day: I had a report on the case a few months ago. There is every reason to believe that the man's physical condition is good, because since his operation he has reenlisted for another term of service, and he must have been fairly fit to have stood that test. As to the course of the projectile, when the man was brought to the hospital, the point of entrance of the bullet was so situated that it looked very much as though the bullet had passed through the femoral artery and immediate preparations were made for an operation. When the tourniquet was removed, however, there was no hemorrhage. At that time the vessels in the leg were pulsating, but still the line of the wound seemed to pass through the femoral region. When the wound had healed by primary union after a couple of weeks this man was instructed to note the condition of his leg, and if any swelling appeared to return to me immediately. Inasmuch as the thrill persists, the question arises whether or not there was a communication still remaining between the sac and the artery which was not obliterated by the operation. I believe, however, that the sac has been entirely eliminated and that the persistence of the thrill is due to some other injury by the projectile in some other part of the wound. Perhaps a small vein and artery have been cut and united afterward, or the femoral artery and vein may have been joined through traumatism in another place; but I am very sure that the sac itself has been eliminated. I was somewhat impressed by the appearance of the field. It was similar to the representations of Dr. Matas in his original illustration. It looked exactly as his drawings have shown it, and the execution of the technic is very easy. In emptying the sac, the first appearance of the sac was as though the clot had been entirely turned out, and after the first suture was made I was horrified to have it pull out, because I felt I had a typical case of traumatic aneurysm in a perfectly healthy vessel, and therefore did not expect to encounter such a difficulty at that time. On further examination I found a rather highly organized layer of fibrin of considerable thickness lining the interior of the sac. It was through that that I had passed the first suture, and therefore it so easily pulled through. This fibrin was easily peeled out and the glistening vault of the sac appeared beneath. There was no difficulty in running the sutures through the sac wall in the classical way, as represented by Dr. Matas.

DR. J. SHELTON HORSLEY, Richmond, Va.: I used the Matas operation for a popliteal aneurysm in a colored man with a history of syphilis. The operation was done July 22, 1911, and consisted in splitting the sac, turning out the clots, and then obliterating the sac by tiers of continuous buttonhole catgut sutures. The leg was at no time cold, sensation was perfect and there was no pain. The wound healed by first intention throughout. When last heard from (about two months ago) the patient was in excellent condition. Dr. Binnie laid stress on the importance of doing an obliterative operation rather than a reconstructive operation. Anyone with experience in experimental arterial suturing knows how difficult it is to prevent clotting and obliteration of an artery when it is sutured. Not only must the operator be absolutely aseptic in technic, but the utmost gentleness must be used

in handling the intima which should never be allowed to dry and should never be touched with sponges or instruments. The sutures must be of the finest material. Even with practically perfect technic clotting and obliteration occur in from 25 to 40 per cent. of such cases when suturing healthy arteries. It is hardly possible that a reconstructive aneurysmorrhaphy as ordinarily done on a diseased artery can ever give a permanent channel. It seems to me that the Matas operation is about the last word in the type of aneurysm due to arteritis. When a healthy arterial coat is united, as in a traumatic aneurysm, there may be some chance for success, but the majority of aneurysms are due to arteritis caused by syphilis and the very thing that causes the aneurysm will probably interfere with the healing of the sutures even if the reconstructive operation could be carried out with the greatest care. This same condition of arteritis would prevent the insertion of a segment of vein between the ends of the artery after excision of the aneurysm sac—an operation which would be feasible in traumatic aneurysm with healthy arterial walls. It would seem then almost a waste of time to attempt a reconstructive operation in an aneurysm due to arteritis.

DR. MAX BALLIN, Detroit: I wish to speak of the thrill which existed in Dr. Ford's case. I once had a patient, a lady, who, in 1905, was injured just as was the soldier in Dr. Ford's case. She had been doing some wood-carving when the chisel slipped and entered her thigh. The first wound was closed by deep sutures. Three months later an aneurysm appeared of about the size of a man's fist. This aneurysm caused so much pain and disturbance of the circulation that the patient was unable to walk when I first saw her. I did a typical Matas operation. When the sac was exposed it appeared to be perfect, and I am sure that there was no connection with the vein. About four weeks after the operation I noticed a thrill and the thrill has persisted more or less ever since, without, however, causing any disturbance of the function of the leg. I had also written Dr. Matas about it. He did not say that an arteriovenous communication existed. Neither did I, because such a condition usually shows a great dilatation of the veins. There was no great varicose formation in this case. I think that the thrill was caused by the dilatation of some small branch of an artery. This operation was done in 1905 and the patient is perfectly well to-day. There is no disturbance. I saw a very singular case of aneurysm about three months ago, in which a similar operation was done. I have not found any similar case in the literature, either as to cause or location of the aneurysm. An engineer tried to stop a big sliding mass of steel, which overextended the wrist. Immediately after the accident there was no lesion of the skin or did he seem to have suffered in any way. Later some big veins appeared on the back of the hand. They were so large that his physician took out three or four of them, as we do in a case of varicose veins of the leg. The man was not cured by the operation. Six months afterward I discovered that he had an aneurysm in the superficial arch of the ulnar artery, that there was a pronounced tumor which communicated with the posterior veins. The sac of the aneurysm was so thin that a Matas operation was out of the question. It was easily dissected out and the man's disability disappeared after having been present for six months. Enlargement of the veins is the most pronounced symptom of communication between an artery and a vein, and I do not believe that that was present in either Dr. Ford's case or mine.

DR. THOMAS W. HUNTINGTON, San Francisco: A duty devolves on the surgeon to educate the medical men of his community in regard to the value of this very simple and logical procedure. In the last twelve months, I have seen three cases of aneurysm, two of the popliteal and one of the external iliac artery, all of which had been watched by physicians, for many months, until they had reached a point where the patient declined any operative interference. It is probable that, in every instance, an early operation would have given relief. It seems as if the internist does not appreciate the ease with which this operation can be done or the results which are to be obtained. The procedure is one which becomes safer inversely as it is adopted toward the beginning of the lesion. I am able to report but one instance of aneurysmorraphy by the Matas method, having the popliteal aneurysm. The picture, as presented, was as described by Dr. Matas. The method, as set forth by Dr. Matas, is a perfectly obvious one.

MAJOR CLYDE FORD, U. S. Army: As to the communication between the vein and artery: as Dr. Powers stated, the thrill in my case was evident immediately after the obliteration of the sac. It was first heard while the patient was still in bed, and it gave us a great deal of apprehension. It is still there. I think there must have been a communication at the time of the operation between the vein and the artery which was not involved in the aneurysmal sac. Dr. Powers wrote to Dr. Matas at the time, and he also expressed the feeling that there was some communication. He added that it need not be the source of any apprehension, but rather give us some comfort, because it would assure the relief of any other pressure on the sac. If the pressure were well balanced and distributed, the vessels would not dilate. That was true in our case. There was no dilatation of the vessels.

DR. JOHN H. GIBBON, Philadelphia: I want to emphasize again the point I tried to make in my paper—that the obliterative operation is the simplest and the safest operation. In the popliteal, femoral, brachial and external carotid arteries I believe there is no indication to do a reconstructive or restorative operation unless the case is one of traumatic aneurysm. Of course, the reconstructive operation is the ideal one, and it appeals to us as surgeons. It is a most ingenious one, but the indications for its performance are very limited. Moreover, I believe that many of the results obtained from the operation have come about in spite of thrombosis of the artery after the reconstruction. I do not believe that it remains open, because, as Dr. Horsley said, 35 to 40 per cent. of our experimental operations are followed by thrombosis. The obliterative operation is the only one which should be generally done, at least until one has had some experience with this work.

GYNECOLOGIC PELVIC DRAINAGE*

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While the subject of peritoneal drainage is an old one and its indications are quite well settled, yet in technic and laws governing it we are not all agreed, and I fancy it must be thoroughly studied further along those lines. Its mastery, like that of aerostatics, will require still more patient and scientific investigation and the practical application of the knowlege thus obtained. I therefore offer no apology for a few details concerning gynecologic pelvic drainage.

HISTORY

Hippocrates[1] recommended the use of drainage-tubes in the treatment of pleural effusions and Celsus[2] used conical lead and brass tubes for drainage in abdominal ascites. Down through the centuries these tubes of metal have been used, though recently to a much less extent, and during the past thirty years in abdominal surgery the glass tube, introduced by Koeberle, in 1867, and modified by Keith and Wells, has succeeded it, and in turn has been practically superseded by soft rubber tubes and gauze. According to Moore,[3] Heister first used capillary drainage in the eighteenth century, and Chassaignac, in 1859, introduced the soft rubber drain-

* Read in the Section on Obstetrics and Gynecology of the American Medical Association, at its Sixty-Third Annual Session, held at Atlantic City, June, 1912.

1. Hippocrates: De Morbis, Book iv.
2. Celsus: De Medicina, Book vii, Chap. xv.
3. Moore: Bryant's American Practice of Surgery, i, 761.

age-tube. In February, 1855, Peaslee[4] passed a corked, gum-elastic catheter through the vulva and vagina into the pouch of Douglas of a patient he was operating on for the removal of an ovarian tumor complicated by ascites. Through this catheter he later flushed the peritoneum for several weeks. This was probably the beginning of the use of dependent drainage of the culdesac through the vagina. Later, gauze, the cigarette drain and soft rubber tubing were introduced for this purpose.

The subject of drainage of the peritoneal cavity has been widely discussed. The various routes and materials employed, the indications and objections to its employment, the relative merits of the different materials employed, and the laws influencing it have been the chief headings under which it has been discussed.

Muscatello's investigation of the peritoneal lymphatic currents and of the structure of the diaphragm, linked with Clark's prodigious bacteriologic study of the affected areas in the lower part of the peritoneum and of the conditions of drainage materials, while employed in draining the peritoneal cavity, markedly lessened the employment of abdominal drainage after intraperitoneal or transperitoneal operations. Several observers found that gravity was a necessary adjuvant to successful drainage of pus from cavities. This led Clark to recommend assisting natural drainage of the peritoneum through the diaphragm by placing the latter structure in a dependent position. Fowler advised placing the patient in the directly opposite position, and drainage of the lower portion of the abdominal cavity by drains passing through the lower abdominal wall. Coffey[5] by experimentation demonstrated the great difficulty of positional drainage of the pelvic portion of the peritoneal cavity into the abdominal portion and *vice versa*. Rhoads,[6] after considerable experimental work, has declared that the forces necessary to satisfactory drainage, whatever the material used, are either gravity or unbalanced gravity yoked to capillary attraction.

I do not intend to discuss the broad subject of peritoneal drainage, for such topics as drainage versus no drainage, the Clark position or the Fowler position, whether for an appreciable period beyond a few hours peritoneal drainage may be continued, etc., would receive attention rather than the subject I introduce here. All recognize the superlative value of gravity in drainage. I might here logically state my belief that resort to abdominal drainage for pelvic conditions in women is never justifiable when dependent drainage is possible. Surely the dangers of contamination of the abdominal part of the peritoneum and of the sutured wound of the abdominal wall, as well as weakening of the latter, are admittedly present when the drainage material passes through the abdominal wound; and the upward drainage is usually not so satisfactory as is the dependent vaginal drainage. I believe I have not drained the pelvis through the abdominal wall in fifteen or more years.

INDICATIONS FOR DRAINAGE

The indications for drainage of the pelvic portion of the peritoneum are (1) the suspected presence of infectious materials, such as pus or serum or infected blood-clots of ovarian, uterine or tubal hemorrhages caused by ectopic pregnancy or other conditions; (2) capillary hemorrhages and denuded areas resulting from separation of broad adhesions between the remaining pelvic structures and the uterus, pelvis, fallopian tubes and ovaries or neoplasms of the same; (3) injuries of the rectum, lower ureter or bladder resulting usually from operations on the adnexa or on those structures themselves by the transperitoneal route and from which sites subsequent leakage may be feared.

I believe at the present time no gynecologic surgeon of note would drain after operation for uninfected ectopic pregnancy or for an accumulation of clean blood in the peritoneal cavity from any cause whatever. But when blood infected from the colon bacillus or other bacteria, or infected urine has escaped, special care is called for and provision must be made for escape of infectious materials. Transperitoneal ureterolithotomy or cystotomy with urine loaded with pyogenic bacteria may be mentioned as conditions calling for such drainage. The escape of pus from fallopian tubes during their removal by the abdominal route, while formerly regarded as a positive indication for drainage, is rarely now regarded as sufficient indication for it. No doubt we shall occasionally err in this, as such pus, while not usually surgically offensive, probably is so occasionally. This opinion is supported by the not uncommon death from peritonitis following the bursting of old pus tubes.

Clark has insisted on greater confidence in the ability of the peritoneum to dispose of bacterial invasions, arguing that by the introduction into the peritoneal cavity of foreign matter, such as drainage goods, we embarrass the peritoneum and enfeeble its efforts to rid itself of dangerous material. I believe he is largely, but not entirely, correct in that doctrine. A feature sometimes overlooked, and occasionally of great importance, in the indications for drainage is the lessened resisting power of the patient. I am sure we have all had deaths from peritonitis after operation in cases in which we have relied on a higher efficiency of such power than the patient actually possessed. We have been deceived in that estimate, and women who seemed almost positively safe, except for shock following the operation, have, a week or more later, without local symptoms, died of peritonitis, and the diagnosis has been made only on the autopsy table. I believe, in the presence of large areas of denuded surfaces in the pelvis after separation of adhesions or removal of various structures, special protection is needed against adhesions to intestine and the peritoneum from suppuration of such areas.

Very often they cannot be covered well by peritoneum. In such condition we do well to cover them lightly with gauze which is to be removed by the vaginal route. All are familiar with Nature's plan of covering over this gauze by adhesions between the intestinal loops, mesentery and surrounding structures, thus separating it from the abdominal cavity. These adhesions later dissolve, as demonstrated by subsequent inspection, but adhesions that form between the peritoneal or other coats of the intestine and such denuded areas do not dissolve. On the contrary they are very dense, and frequently demand operation for relief.

MATERIALS

The materials employed for pelvic drainage are gauze, silk and soft rubber tubing. My experience with silk has been too limited to permit an expert opinion as to its value as a substitute for gauze. It enmeshes the soft tissues along the drainage tract less than gauze and therefore when removed early gives rise to less pain and traumatism. I intend employing a fabric composed of both silk and cotton. For the cases in which free drainage is necessary, I employ the soft rubber tube alone.

4. Peaslee: Am. Jour. Obst., 1870, iii, 300.
5. Coffey: THE JOURNAL A. M. A., March 16, 1907, p. 937.
6. Rhoads: Am. Jour. Surg., 1911, xxv, 348.

Purulent collections in the culdesac, the ovary or the fallopian tube, when incised from below, are, in my practice, subjected to tube drainage alone. To introduce gauze from the vaginal side for pelvic peritoneal drainage is practically never done, except when by the vaginal route operation has been done for liberation of adhesions of the uterus or appendages, or removal of those structures. In pelvic abscesses opened from the vaginal side, I always use a soft rubber tube having a caliber of one-half inch or more.

The upper end of this tube has two lateral arms each an inch in length that overlap the uterosacral ligaments. These arms prevent premature expulsion of the tube and, if the cavity to be drained be large, I place on the lower vaginal end the same measure to prevent the slipping of the whole tube into the cavity. This rubber tube stops in the upper part of the vagina and after the first twenty-four hours of its employment vaginal douches are used to assist in cleanliness. Thus it will appear that I use the rubber tube alone only in closed cavities, that is, cavities that are by adhesions entirely separated from the general peritoneal cavity. For all other drainage in this region I employ gauze, either alone or as a cigarette drain or in conjunction with a rubber tube.

TECHNIC

For fully twenty years I have employed vaginal gauze drainage after abdominal and vaginal operations on the uterus and appendages, but an unfortunate experience induced me to change the method, in use so commonly to this day, of opening the vaginal roof behind the cervix. In that instance I was operating at a clinic several hundred miles from home and was assisted by one of the attending surgeons at that hospital. Requested to pass long forceps up the vagina to guide me in cutting from the peritoneum into the vagina, he proceeded to do so. An incision was made and he pushed his forceps upward through the opening, grasping the gauze, and withdrew them. Late that evening as I was taking a train to return home the nurse informed him that gauze was protruding from the anus, and on examination he found gauze in the rectum and none in the vagina. The patient died of peritonitis. Baldwin relates the unpleasant experience of having an assistant excitedly plunge the forceps along the urethra instead of the vagina.

I then adopted the following plan of making the opening, which has not failed me and is easily practiced: Holding the uterus well forward, the tissues at the bottom of the culdesac are grasped but a short distance from the cervix by a reliable clamp, and with long, blunt-pointed, curved scissors, an opening is made into the vagina between the clamp and the cervix. The vagina and vulva having been previously sterilized (latterly with iodin) danger of infection is obviated. The opening may now be enlarged to reach from one uterosacral ligament to the other and backward toward the rectum as far as desired. A strip of gauze, a yard wide and as long as is desired, is used, and a uterine sound, properly curved, easily pushes the end of the gauze downward through the opening and through the vagina and vulva. The remainder of the gauze is now brought in contact as desired with the parts to be covered. The intestines and omentum are carefully placed over the gauze. Sometimes a soft rubber tube one-half to 1 inch in diameter, such as previously mentioned, is first passed through the cut opening and the gauze passed through it. In this way the surgeon does all the work and knows he has not erred.

Since March 15, 1902, I have practiced a modification of this plan that I find I have employed much more than the above plan: It is especially applicable when the uterus has been amputated at about the internal os. The cervical stump on either side and slightly posteriorly being grasped with a vulsellum, one blade of a pair of long, straight, blunt-pointed scissors is passed down through the cervical canal and the other blade to the bottom of the culdesac. The blades are now made to cut through the posterior part of the stump completely and through the tissues at the bottom of the culdesac as near to the rectum as is deemed sufficient to secure a hole large enough to admit the passage of a large piece of gauze and yet have it lie loosely in the opening. The gauze is now pushed in place with the end protruding from the vulva. Coffey and others have told us that gauze drains so employed are functionable in proportion to the area of a transverse section at the point of constriction. I, therefore, aim to have the opening large and the gauze as large transversely as the opening will loosely carry.

As the cervical stump thus treated is not covered over by sutured peritoneum, a saving in time is secured. In removing the gauze I generally begin the fourth day and remove one-third each day. This is made easy as the amount used is known and a clamp applied to the end of the gauze protruding from the vulva pulls out one-third as much as was used, and this is cut off. A vaginal douche of about 0.5 per cent. liquor cresolis compositus given half an hour to an hour in advance facilitates the process of removal considerably. A bad feature of this plan is that considerable pain is caused at times by the withdrawal of the gauze, particularly when a tube is not used or the preliminary douche given.

If a tube be used it may be left another day. Care must be observed to avoid packing too tightly or too near the defective bowel, bladder or ureter. Gauze thus packed is a notorious agent for harm if in contact with sutures in any of these structures. The principle is to have the gauze sufficiently near to guide away leaking material from such areas, if any exists, but not to come into immediate contact with them. I am opposed to repacking the culdesac with gauze from below, believing that it not only is painful but is not usually done with faultless technic and consequently may work grave harm to the patient. Such repacking becomes contra-indicated when the tube is allowed to remain one or two days after the gauze has been removed.

If the uterus be entirely removed little difficulty is experienced in pushing gauze from the peritoneal cavity down through the vulva. But the round ligaments should be sutured to the vagina in advance to prevent prolapse of that tube while the gauze is being inserted or withdrawn

The Rochambeau.

ABSTRACT OF DISCUSSION

DR. JOHN G. CLARK, Philadelphia: From the study of 1,700 abdominal cases, I started with the principle that the drain is a splendid thing. Before I had finished I was convinced that drainage as then used was a bad thing. The impression might be given from Dr. Bovée's paper that only in those cases in which there was well-defined infection would I elevate the pelvis and put fluid into the abdominal cavity. On the contrary, if there was well-defined infection in the way of pus, under no condition should such posture be assumed. For the last six years I have not used salt solution in the abdominal cavity, because in the use of the salt solution in the colon when the patient is under the anesthetic and in the Fowler position a vast amount is received and is apt to produce an

overflow of lymph in the peritoneal cavity. I am glad to hear Dr. Bovée say that he has not used abdominal drainage for several years. I believe that a foreign body put into an organ markedly ptosed, but still functionating, makes that organ almost unworkable. I have seen this again and again in patients operated on. Patients have told me that they are slightly constipated. Subsequently they have been constipated when drainage has been used. One sees this in the use of the *x*-ray revealing fixation from adhesions, particularly around drainage tracts. Therefore, the utilization of the pelvic drainage I am sure is the proper method. It is valuable particularly in avoiding disagreeable and disastrous sequelæ. Therefore, on the general details of the plan of drainage such as Dr. Bovée indicates, with the holding down to the smallest possible number of cases, I am quite thoroughly in accord.

Dr. H. O. Marcy, Boston: Dr. Joseph Eastman, of Indianapolis, devised an instrument to be applied to the vagina posterior to the cervix for elevating a pelvic tumor. This instrument serves also admirably for lifting into the abdominal cavity the posterior fold of the vagina in such a way that one may be exactly sure where to open it. It is broad and deeply grooved so that one can widen the incision with perfect safety. In discussing the question of drainage we go back a quarter of a century when everybody was draining everything. My old master, Mr. Lister, the last time we discussed it, said, "I put in less large tubes; cut them shorter and remove them earlier than formerly." Sims, another of my old teachers, said "The red fluid, the bloody serum, is the exudate of dangerous character and must be drained away." I have called this aseptic bloody serum "the first aid to the wounded." All wounds that are aseptic should never be drained. As Dr. Bovée has said, if we are to drain the wound, we are to drain it in an efficient way. Of course, abdominal drainage is all wrong. We have many times discussed this subject in this Section with much earnestness and the consensus of opinion has been that the abdominal drain is no longer to be used. If one drains at all, one should drain by gravity; drain sufficiently so that you are sure to have efficient drainage. Do not leave the drain in too long. An abundant exudate of leukocytes often results, producing permanent adhesions. Septic wounds should be drained.

Dr. J. H. Carstens, Detroit: I have had just such troubles. When doing an abdominal section and finding that I had to drain I did not know how to get the opening through into the vagina and avoiding infection. Therefore, a long time ago I devised a forceps like an ordinary dressing forceps, not sharp but bluntly pointed which is almost like a uterine dilator. I run that into the vagina and, holding my finger down where it should come out, I press it through the vagina. I then make, by separating the blades, a larger opening and insert the drainage-tube without using the finger in the vagina. In this way the posterior culdesac can be drained without difficulty. I always use a rubber tube. When gauze is put in, it ceases to drain in a short time. I do not see why the rubber tube is taken out in four or five days. Sometimes, in spite of all one can do, when the anterior and posterior wall in the pelvis come together, there is in one corner a little point of infection where the drain does not come. That will in the course of time develop into an abscess. If the drainage-tube is taken out too soon the vaginal muscles will close up and no drainage will be left. If the tube is left in for ten or twelve days the little abscess will move in the direction of least resistance, that is, toward the tube, and there will be no trouble. Otherwise it will be necessary, sometimes, to reopen the culdesac.

Dr. F. J. Plondke, St. Paul: Dr. Bovée's method is the one I have used for years with much satisfaction. I use rubber tubing and gauze. If the tube should become clogged we have the gauze to help out for the time being. I was glad to hear Dr. Bovée say he had had the experience of going through the rectum. A year ago in operating on pus tubes I asked the intern to introduce his finger into the vagina as I wanted to make an opening from the culdesac. I pushed the tube through and as I was about to finish the operation I discovered that both tube and gauze had penetrated the rectum. Fortunately, as it was discovered in time, I passed my finger into the opening in the culdesac and caught the tube and gauze, introduced another tube and pulled the gauze out through the vagina. The patient made an uneventful recovery. The next day another patient in the hospital operated on twelve days before suddenly developed symptoms of obstruction. I opened and found adhesions down in the pelvis. In that case I also opened the culdesac. I asked one of my assistants to introduce a finger into the vagina and was much surprised to find that this was also through the rectum. This patient, unfortunately, died. I want to emphasize the fact that when the patient is anesthetized and the sphincter dilated it is surprisingly easy to make this mistake, especially in a young woman.

Dr. L. S. McMurtry, Louisville, Ky.: Notwithstanding that less than 5 per cent. of gynecologic cases require drainage, in all cases of abdominal section, gynecologic cases, even emergency cases, when practicable, the vagina ought to be prepared as if for a vaginal section, in order that this method of drainage may be used when indicated in an effective and aseptic way. Whenever necessary to use forceps as a guide this should always be done under vision.

Dr. J. W. Bovée, Washington, D. C.: This method was reported especially to show the great advantage of its technic over the work being done from below. All my abdominal pelvic cases are prepared, also as for minor operations. Patients are put on the table in the minor position. Iodin is used in the field of possible operation and injected into the uterus under pressure. Many times, on opening the abdomen immediately after injecting the uterus with iodin, the abdominal peritoneum is stained, as in ruptured tubal pregnancy, with blood. It was with a great deal of trepidation that I watched the first case in which I observed that appearance after operation. As there were no symptoms I found that iodin was not so dangerous in the abdominal cavity. There was decided peritoneal staining from the injection of this 3.5 per cent. tincture of iodin into the uterus. I would like to call attention to the danger of secondary application of drainage from below. It is not done under strict aseptic precautions and carries danger with it. Therefore, I use the rubber tubes and expect them to be retained as long as drainage is necessary. My method is to cover the denuded surfaces with gauze which is removed at about the fourth day, leaving the tube to carry anything off for a day or two later. I, therefore, in such cases do not think it is necessary to leave in the drainage for ten or twelve days. In regard to the gauze packing filling up, I would again call attention to the drainage capacity of gauze being limited to the comparative area on cross section where it passes through the most constricted point as worked out by Coffey. The gauze does not become so saturated that it will not drain the material.

The Physician and His Vacation.—It may be said, indeed, that he who does not make a fool of himself sometimes is a fool all the time. Similarly may it be urged that nothing can take the place of natural recreation. "Back to nature" should be the sign and token of the holiday. Artificial exercise is on all fours with artificial diet. Gymnasiums have their merits and their values, but they do not inspire and they do not suggest; they can never take the place of savagery and the wild. If one would recreate himself, make himself over, he must do it from the human side. He may be an archangel in embryo, but he is, nevertheless, a man in fact. And in any event, one's aim should not be not to transform himself into a god, but to develop his manhood; not to ape the divine, but to perfect the human. After all, how grand it really is just to be like other men—simply to be human! Flesh and blood are a precious possession. One should rejoice to find himself resembling the man Nature made, conforming to the type of his race. According to the orthodox conception there are only three orders of finite beings—angels, humans and devils. One will be deeply conscious that he is not an angel. So when he discovers himself doing distinctly human things, revealing himself as manlike, he may properly exult, for he has a right to conclude that at least he is not a devil.—Konkle in *Pennsylvania Med. Jour.*

TUMORS OF THE SMALL INTESTINE*

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Tumors of the small intestine are rare surgical conditions but present many problems of extreme interest. While the diagnosis is nearly always shrouded in mystery, nevertheless the perfection of surgical measures enables us to make the attack on these growths very satisfactorily from a technical standpoint. These growths are, in the preponderating number of cases, malignant and, therefore, enhance the responsibility of the clinician in divining their character early and in advising surgical measures with promptitude. While the results have been far from satisfactory, nevertheless it can be shown that our attitude should not be entirely characterized by pessimism.

The benign growths include adenomas, lipomas; fibromas, myomas, angiomas, cysts, lymphangiectasis and that rare condition described by MacCallum, the multiple cavernous hemangiomas of the intestine.

Of these, the adenomas are the most frequent. They may be polypoid in character. The fibroma causing a movable tumor often results in obstruction. F. S. Watson reports a successful resection of a tumor of this type, 2 by 3¼ inches in size.

The subserous lipomas are next in frequency. A very great many are never recognized and are symptomless.

Stetton collected reports of seventy-seven cases somewhat equally divided between the large and small intestine with an average age in the patients of 47 and occurring in both sexes equally. They are usually single, sometimes multiple, and vary from the size of a pea to a child's head, but on an average are about as large as a walnut. They may protrude into the lumen as polyps and, of course, have no tendency to malignancy. If of sufficient size they may cause obstruction; intussusception occurred in about half of the cases in which symptoms were noted. These tumors cause 8 per cent. of the invaginations according to Treves.

Cysts of the small intestine are usually congenital in contrast to those of the large intestine in which inflammatory processes in the mucosa, following dysentery, are probably causative. In the small intestine cysts seem to result from the persisting relics of the irregular obliteration of the omphalomesenteric ducts. They vary in histology from the simple mucous cysts to the dermoid. They are often negligibie in size but if large may produce irregular recurring attacks of partial obstruction. The benign growths rarely become large enough to be felt through the abdominal wall.

MacCallum described a case of cavernous venous tumors situated chiefly in the submucosa throughout the small intestine which seemed to have been rarely observed before, only five similar cases being found in the literature. A man of 54 complained of digestive disturbances which lasted for some months. He died of acute alcoholism. Post-mortem examination showed hemangiomas of the intestine. They were small, fairly firm areas which showed through the mucosa as blackish purple patches, about forty in number.

Of the malignant growths, carcinoma occurs twenty times as often as sarcoma. Sarcoma is more prone to attack the small intestine and carcinoma the large. The small intestine is free from acute flexures and transitional functions and contains liquids. It is not, therefore, subject to the traumas that we recognize as the greatest cause of carcinoma throughout the body. We now appreciate that the prevention of chronic continuous irritation is of vast importance in the prophylaxis of cancer. By the same token it is not improbable that the malignant growths in the small intestine have their precancerous stage which should be looked for just as assiduously as it is in other localities. It has been observed in my own cases that enteritis and colitis are the conditions precedent to the development of malignant neoplasms. They bear the same relation to malignant neoplasms that chronic ulcer does to cancer of the stomach. It behooves us, therefore, to be on the alert for irregular pain, mucus and blood in the stools and constipation, alternating with diarrhea. If, perhaps we can recognize irregular peristalsis or possibly a neoplasm it may still be in the precancerous stage and may probably be in the incipient or curable stage. Carcinoma is apt to produce a stenosis; sarcoma produces dilatation of the intestine as an aneurysmal sac. Carcinoma is more likely to occur at an earlier age in the intestine than in any other cancerous site. In 41,834 autopsies in Vienna, 343 carcinomas of the intestines were found: seven in the duodenum; one in the jejunum; ten in the ileum; 164 in the cecum and colon; 162 in the rectum. According to the statistics of Froehner, 47 per cent. of 128 cases were sarcoma; 22 per cent. carcinoma. While

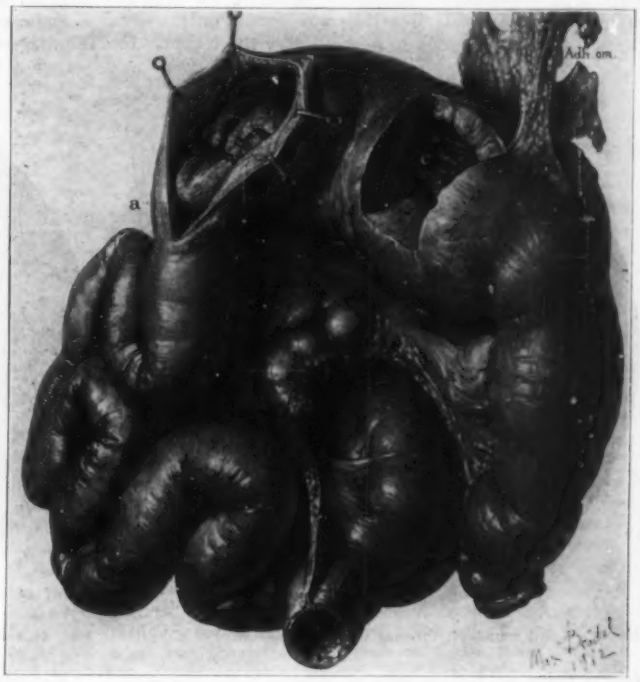

Fig. 1.—Resection of 42 inches of the ileum for sarcoma in boy of 9. Ileocecal anastomosis. Recovery. Patient alive and well at the end of two years.

* Read in the Section on Surgery of the American Medical Association, at the Sixty-Third Annual Session, held at Atlantic City, June, 1912.

the latter are usually single, 44 per cent. were said to be multiple.

Cancer in the duodenum is exceedingly rare. Ewald says only three occurred in 1,148 cases of cancer of the small intestine, yet Syme, of Melbourne, resected a case successfully, as did also Küttner. Brill from a large number of cases from various sources found 2.5 per cent. in the small intestine. In the jejunum not a single case was found out of 63,462 post-mortems, but Keyser collected reports of eleven isolated cases, including one of his own, the average age being 43.9 years.

They are usually of the cylindrical-cell type and have their origin in the follicles of Lieberkühn. In six cases with operation, reports of which were collected by Lecene, only one patient remained permanently cured.

SARCOMA

Sarcoma is usually situated higher in the intestinal tract than carcinoma. In 21,000 autopsies in Vienna sarcoma of the small intestine was found only three times. It is more prone to occur nearer the cecum. It occurs twice as often in men as in women, but the average is less than in cancer.

Corner and Fairbanks collected reports of 175 cases of sarcoma of the intestinal tract; twenty were in the ileocecal region; eleven in the large intestine; seven in the rectum; fourteen in the esophagus; fifty-eight in the stomach and sixty-five in the small intestine. Of this latter number, 60 per cent. caused obstruction. They presented all the microscopic varieties, the round cell being the most frequent, but the spindle cell being the most favorable from a prognostic standpoint. The lymphosarcoma, originating in the submucous lymph-nodes, early involves the muscular layer which becomes paralyzed, resulting in dilatation.

In a patient under 15 sarcoma should be suspected, carcinoma usually occurring after the age of 40. The tumors are of a very much larger growth and are often movable. When the tumor occurs in the right iliac region one has to eliminate chronic appendicitis, retroperitoneal abscess, tuberculosis, actinomycosis and chronic intussusception.

Balzer estimated their duration from about two weeks to three and one-quarter years. The fatal termination occurs usually in the first nine months, although Rutherford describes one which endured for two and one-half years.

SYMPTOMS

The higher in the intestinal tract the situation of the tumor, the more pronounced are the symptoms. It may run a latent course, produce indefinite symptoms or, finally, stenosis, ending in complete obstruction. These conditions may all occur at identical situations in different cases. Heredity offers no valuable information, although traumatism was mentioned in two cases; metastasis resulted in three-fifths of the patients. The diagnosis, as Rheinwald says, is made in most cases of autopsies *in vivo* or *in mortuo*. Extraordinarily large tumors are usually sarcoma and curiously are quite painless. The rapid course with emaciation and marasmus indicates sarcoma.

Anderson found no cases in the literature in which the diagnosis could be made.

Fig. 2.—Small round-cell sarcoma of small intestine 1/6 objective.

Fig. 3.—Small round-cell sarcoma of small intestine 1/6 objective.

The chronic or recurring cramping, colicky pains are quite suggestive, however, and when severe without inflammatory symptoms, associated with distention and vomiting, active and visible peristalsis eventuates into acute obstruction. The early symptoms are evasive and often are associated with loss of appetite, nausea and vomiting with epigastric pain. If this is sudden it is a warning. Distention may occur from implication of the peritoneum, interference with blood-vessels, from pressure, tympany, the size of the growth and, finally, from perforation. In advanced cases effusion, either serous or chyle-like, hemorrhagic or suppurative, is present. Blood may be found in the stools. Indicanuria and albumin sometimes occur. The short duration of the disease is characteristic.

In the Massachusetts General Hospital, of seventy-seven patients with cancer of the intestine operated on by various surgeons from 1890 to 1900, 28 per cent died in the first week, 19 per cent. in the first four weeks, 18 per cent. within the first half year, 5 per cent. between the first half of the year and the whole year, 11 per cent.

between one and two years, 5 per cent. between two and three years, and 3 per cent. are still alive. Thus less than 30 per cent. lived longer than six months after operation.

Anderson reported the case of a patient on whom resection was done for a sarcoma and who was alive after eighteen months, but he knew of only one other patient that lived over a year.

Corner and Fairbanks take a more optimistic view, particularly in reference to the early cases and found six examples, in their collection, of cure lasting from one to nine years. Among the children under 10 years of age in a group of fifteen case-reports collected by Van Zwaluwenburg only one succumbed to operation. Two are alive and well one year after operation; one is well six months afterward.

Moynihan collected reports of operations on forty patients, twenty-five of whom recovered.

Erdman removed 48 inches of the jejunum and ileum for sarcoma complicated by small metastasis of the stomach which was excised with recovery.

Varley removed 6 feet 5 inches in a boy of 6 with operative and physiologic recovery.

The following case presents a number of interesting features in its clinical course, surgical features, pathologic findings and result.

History.—The patient, W. K., aged 9, referred to me by Dr. Donoho, of Hartsville, Tenn., complained of frequent colics and presented a right-sided movable abdominal tumor. The parents and one brother and sister were living and well, but the mother and another brother had had suppurative cervical glands. The grandfather and one aunt had had tuberculosis, but there was no history of cancer. During his second summer the patient had a very severe attack of gastro-enteritis which lasted three months and was attended with considerable blood, very frequent stools and great emaciation. He had a diarrhea every summer thereafter for five summers, but was apparently well in the winter. Two years before admission he began to have attacks of abdominal colic, rather mild at first and relieved spontaneously. A little later they were more severe, lasted longer and exhausted most of the household remedies and, finally, before he came for treatment, they required morphin for relief. At first these colics occurred every month and gradually increased in frequency until they came every few days. The stools were observed to be smaller in caliber during the previous six months. During this time the boy was obliged to eat soft diet as solid food would cause an attack of pain. Castor oil was invariably administered with these attacks of colic and later it was necessary to give it daily. For the last five months an appreciable swelling in the right iliac region appeared with each attack of cramps and vomiting; the latter was always associated with paroxysms, which came on suddenly and persisted with some severity. This swelling was extremely sensitive, but disappeared as relief was obtained from purgation or morphin. Between the periods of cramping the patient seemed to be quite well and active, although he had lost considerable weight as the result of the restricted diet.

Examination.—A movable tumor in the right iliac region was prominent and easily discerned. His physician who had seen him only during the attacks of pain had only observed this in a tranquil interval some days before. It had evidently been in existence, however, for some weeks. The tumor was only slightly dull on percussion, non-sensitive and movable within moderate limitation. The chest was normal; there was no elevation in temperature and the urine was normal. The enlargement was at first thought to be tuberculous, not only on account of the history, but on account of the further fact that he used almost an exclusive milk-diet, which came from a cow that had lately died after presenting cough and other evidences of tuberculosis. There was no ascites, however, and a tuberculin test was negative. Operation was advised for a neoplasm of undetermined origin.

Operation.—An incision through the right semilunaris revealed the growth in the ileum some 5 inches in length and about 2¾ inches in circumference. A group of glands was situated immediately underneath it and extended far enough into the mesentery to overlap the blood-supply of a number of inches distal to the growth. The omentum was adherent at the apex of the neoplasm. After its division and clamping of the mesentery, the mass was removed, together with the glands, which also necessitated the removal of a number of inches of small intestine that were not involved. The entire specimen measured 42 inches. (Fig. 1.) The terminal ileum was removed flush from the cecum which opening was closed, and at a higher point a lateral ileocecal anastomosis was made with linen suture. Microscopical examination showed small round celled sarcoma. (Figs. 2 and 3.)

Result.—The patient made a rather slow, but good, recovery. During the first few months the bowels moved several times a day, but during the last year they are normal in amount but rather soft. The patient weighed, at the time of the operation, 45 pounds; at the end of two years he now weighs 66½ pounds, is apparently free from recurrence and in the full enjoyment of boyish vigor.

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ABSTRACT OF DISCUSSION

DR. DE WITT STETTEN, New York: Dr. Haggard spoke of the so-called subserous lipoma of the intestine. There has been considerable confusion in the classification of these tumors, especially regarding the portion of the intestine from which they arise. Three years ago I made a rather careful study of this subject and found that most of these tumors are not subserous at all. They are submucous, developing from the fat of the submucosa and not from the subserous fat. Subserous lipomas do exist, but they rarely produce intestinal symptoms. They usually give symptoms characteristic of abdominal tumor, without any distinct reference to the intestinal tract. I collected reports of seventy-seven cases of submucous lipoma of the gastro-intestinal tract at that time, and about 40 per cent. were of the small intestine. They are very benign pathologically, but may become particularly malignant clinically, resulting in an acute or chronic intussusception—or they may cause obstruction by obturation. The case that led me to my research on the subject was a large submucous lipoma of the ileum near the ileocecal junction, which produced a chronic intussusception, so that the tumor prolapsed at the anus. The patient was referred to me with the diagnosis of prolapse of the rectum. I made a careful examination and came to the conclusion that I was dealing with a case of high sigmoid polyp. I performed a laparotomy and then found the ileocecal invagination due to a submucous lipoma of the ileum. I did a resection and the patient made an uneventful recovery. We had another case of large submucous lipoma of the intestine at the German Hospital. This patient was also operated on successfully. Since the publication of my report I have heard that several of my New York colleagues have had similar cases. Wharton, of Philadelphia, has recently reported two new cases. Though the condition is not a common one, it must be considered in the surgery of the abdomen.

DR. A. MCGLANNAN, Baltimore: The point to which I wish to direct attention is the relation of tumors of the small intestine to intussusception; that is, intussusception of the small intestine proper as distinguished from that of the ileocecal region and large intestine. Tumor is much more likely to be the cause of intussusception in adults than in children. I have recently gone over the records of seventeen cases of intussusception of the small intestine and found 25 per cent. of these cases associated with tumor. Three of five cases in the small intestine proper were due to tumor. All

the patients were admitted to the hospital with a history of recurrent intussusception, the last attack leading to an urgent acute obstruction. The primary operation, therefore, was always limited to the relief of this obstruction. In two of these three patients, the intussusception recurred before the patient had left the hospital. It is therefore important to remove all tumors of the small intestine because of the danger of obstruction produced by the recurrent intussusception that is so frequently caused by these growths.

BENIGN EPITHELIOMA

A STUDY OF TRANSITIONAL MORPHOLOGY *

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The skin has long been regarded as a special field of predilection for the study of morphologic changes incident to malignancy, both in its early, or so-called premalignant, and later, well-defined stages. The reasons are obvious. Growth on the surface of the body can be earlier recognized, observed clinically with more painstaking scrutiny, and removed for histologic examination and study with more facility than those situated elsewhere in the body. Furthermore, clinical investigation and study has definitely established that there is a long series of dermatologic phases, the so-called precancerous conditions, incident to a variety of influences, which present unusual facilities for the clinical and histologic study of the transitional changes from benign to malign conditions.

Fig. 1.—Morphea-like epithelioma.

Fig. 2.—Carcinoma epitheliale cicatrisans in a burn of twenty-four years' duration.

Some of these special dermatologic advantages appear to me to be somewhat overestimated and, from a histologic standpoint, to be more apparent than real. The contention is often made that the skin affords the best opportunity for the study of the genesis and inception of malignancy because the tumor can be seen and removed before malignancy has definitely progressed, and because the host of precancerous affections afford unexcelled facilities in the recognition and study of the incipient changes. A scant perusal of the literature confirms beyond question that these views attain generally. There are relatively few writers who have morphologically studied cancerous and precancerous conditions of the skin, who have not attributed the inception and genesis of the growth in question to some special structure, hair follicle, sweat-gland, basal or squamous cellular tissue. Unless this observation is deduced by analogy, as will be explained later, it must possess a fallacious and misleading character.

No malignant tumor of the skin can attain sufficient size to permit macroscopic recognition and at the same time demonstrate in recognizable and unchanged form the genesis and origin of that tumor from some definite follicle, gland or epidermal structure. Moreover, the transition of benign to malign in the so-called precancerous affections, from either a morphologic or a clinical standpoint, and frequently both, is, as a rule, so gradual and insidious in character, that border-line changes from a histogenetic standpoint, are entirely lost sight of or are devoid of special significance. In these respects, therefore, malignant tumors of the skin differ in no wise materially from those situated elsewhere. If the so-called precancerous, or benign, epitheliomas of the skin do not possess any unusual features for demonstrating the origin and genesis of tumor malignancy over tumors situated elsewhere, there is a certain class that presents some unusual features for the study of the genesis after it is well established. I refer particularly to those forms which are characterized by growths which develop slowly and insidiously, whose centers undergo complete involution and cicatrization, and whose activity is evidenced by a thin, narrow, elevated, glistening, pearly-white border, which slowly, steadily and insidiously extends itself and invades the adjacent normal tissues, and undergoes a commensurate involution toward the center. This narrow spreading border, which scarcely measures 1/16 to 1/8 inch in width, preserves every phase of malignancy from a morphologic standpoint, and presents, on one side, for comparative study and observation, the cicatrized ashes of its burned-up activity, and on the other, normal tissue in process of invasion.

I refer to the so-called multiple benign cystic epitheliomas, five cases of which enter into the morphologic consideration of this paper, and whose clinical features are devoid of special incident and are generally well enough known to require no special comment. To this group has been added a case of morphea-like epithelioma, of four years' duration, in a man 38 years of age (Fig. 1). This form of benign epithelioma, first described by Danlos,[1] and later by Stelwagon,[2] Hartzell[3] and others, is particularly well adapted for the morphologic study of transitional change in epithelioma, inasmuch as the area of active proliferation is an exceedingly narrow border, sharply separating on one side, a wide area, well

* Read in the Section on Dermatology of the American Medical Association, at the Sixty-Third Annual Session, held at Atlantic City, June, 1912.

1. Danlos: Ann. de dermat. et de syph., 1899, x, 656.
2. Stelwagon: Tr. Am. Dermat. Assn., 1899, p. 156.
3. Hartzell: THE JOURNAL A. M. A., July 24, 1909, p. 262.

cicatrized, from tissue that is normal in character. The morphea-like patch, which covered an area the size of a silver dollar and possessed a pearly glistening elevated epitheliomatous-like border scarcely 1/16 of an inch in width, was situated on the right cheek midway between the nose and chin and near the angle of the mouth.

A case of carcinoma epitheliale cicatrisans has been added, because the indolent ulcerations which are generally regarded as benign and precancerous in their incipiency, also pursue a self-limited course and present some unusual features for comparative study. The lesions in this case were multiple, fifteen or twenty in number, and irregularly distributed over the entire left leg, from the middle third of the thigh to the ankle.

Fig. 3.—Multiple benign cystic epithelioma, showing the advancing proliferation of epithelial strands from the pathologic center to the normal uninvaded border. Also hypertrophy of some of these strands into masses resembling tricho-epithelioma.

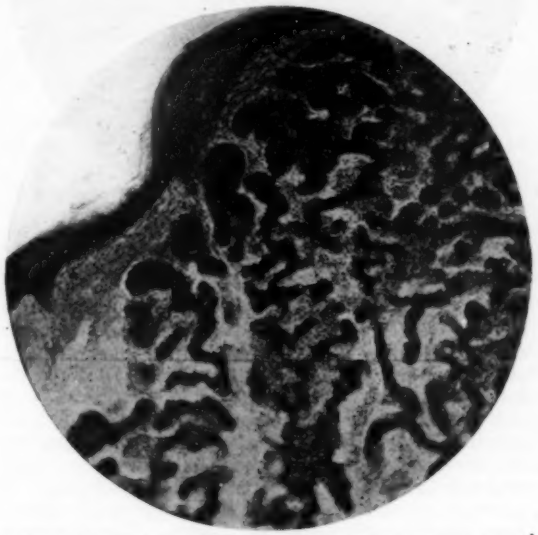

Fig. 4.—Advancing epithelial strands in a case of multiple benign cystic epithelioma.

The patient, a man aged 60 (Fig. 2), fell into a vat of hot water, twenty-four years ago, and incurred a third-degree burn that was three years in healing. It remained healed only two to three years, when the cicatrized area became the seat of indolent ulcerations, which have been constantly making their appearance, and spontaneously disappearing, for almost twenty years. The ulcerations, with their everted, indurated borders, present the clinical characteristics and morphologic histology of rodent ulcer. Their occurrence in a thoroughly cicatrized field, devoid of all forms of specialized structure, hairs, hair-follicles, glands, etc., beginning in cicatrization and ending in cicatrization, presents special features for comparative observation.

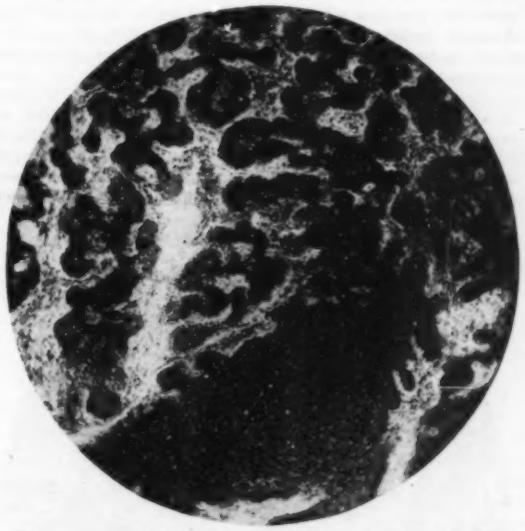

Fig. 5.—Proliferating epithelial strands and tricho-epithelioma-like hypertrophy in a case of multiple benign cystic epithelioma.

Fig. 6.—Morphea-like epithelioma showing pathologic strands near center and hypertrophy of glandular tissue in the normal uninvaded tissue of the immediate neighborhood.

HISTOLOGIC REPORT

An elliptical area of tissue was excised from all the cases, which embraced in its middle third a portion of the spreading, infiltrated border, and extended in one direction of its long axis toward the cicatrized area or center of the lesion, and in the other, toward the normal uninvaded skin. This elliptical area, after being imbedded in paraffin, was sectioned in its long diameter in serials, and stained after the various ordinary methods. I shall not enter into a minute description of all the various findings in each of the individual cases, inasmuch as the pathology of these affections is already sufficiently elucidated, but shall interpret the generalities of the findings.

The histology failed to reveal in all the cases of multiple benign epithelioma, which is one of the earliest recognizable types of precancerous affection of the skin, the exact point of genesis of the pathologic process. Some of the lesions were scarcely larger than a small shot, yet these failed to shed any more light on this particular phase of the question than lesions which were considerably larger in size. The central area of all had undergone sufficient cicatricial involution to erase definitely from observation the particular gland, hair follicle, or other specialized tissue which was the point of original genesis.

The chief activity of the pathologic process seemed centered, in most of the cases, about hair follicles, at the middle third, near their junction with the sebaceous ducts, but only in an apparent, indirect and secondary manner. The cells at this point, under the effect of the abnormal stimulus, underwent proliferation and reduplication in apparent excess over that of other tissue. This did not occur, however, to the exclusion of all other specialized tissue. The earliest hypertrophy, as evidenced on the part of distally and more normally placed tissue, was centered in the sebaceous glands. The hypertrophy of these structures is of relative short duration and yields promptly to a pressure atrophy from inflammatory infiltration.

Fig. 7.—Pathologic area in a case of morphea-like epithelioma. Advancing epithelial strands.

Intermediate in hypertrophy and proliferation between sebaceous glands and hair follicles are the sudoriferous glands. The sweat-glands, however, do not always share strongly in this pathologic process; the degree varies considerably in different specimens, being often so slight as to be easily overlooked and disregarded, and at times excessive enough to predominate over the pathologic syndrome. The latter is particularly the case if the coils, as well as the ducts, are extensively involved. The epidermis could not be demonstrated in any of the cases to share in the pathologic process, which was essentially in all cases, one of subepidermal growth and involvement.

The cells were uniformly small, contained large oval deeply staining nuclei, had non-discernible cell walls, and scanty non-granular protoplasm. The reactionary, inflammatory cell infiltration was closely confined, and mucoid degeneration ensued early. Cornification and nest formation were not in evidence. The orifices of some of the hair follicles occasionally became overdistended with the products of their proliferation. The contents frequently underwent colloid degeneration and, through further distention of follicular walls, formed colloid cysts.

The pathology of the case of morphea-like epithelioma conformed essentially to that of multiple benign cystic epithelioma, and, because of its unusual proportions and more rapid development, offered special facilities for tracing its more active and more extensive progress.

Since, as already stated, the genesis could not be recognized in a single instance, study was centered in its established progress. It is fair to assume that the genesis, irrespective of its origin, must preserve a limited area of uninterrupted continuity, if the lesion preserves a constantly spreading border. Such continuity could be clearly and definitely established only by the study of specimens in serial sections. An unbroken chain of the above-described cellular pathology could be easily traced from follicle to follicle in its uninterrupted course through intervening tissue. The cells were arranged for the most part in cylindrical form, several rows deep, and twined and intertwined in coil-shape fashion. In very thin sections, they appeared in short segments,

Fig. 8.—Squamous-cell epithelioma in a case of carcinoma epitheliale cicatrisans. A previous burn has destroyed all other form of epithelial structure except the epidermis. A squamous-cell epithelioma is the necessary result. Characteristic of scar tissue in general.

which have been often described as epithelial strands and embryonal nests. They took on their greatest degree of active proliferation toward the proximal edge of the spreading border, and particularly in the proximity of hair follicles, which promptly shared their proliferative activity. Here they would often balloon out, assuming the size and appearance of hair follicles, the so-called tricho-epithelioma. These large masses excited the greatest degree of inflammatory reaction and promptly underwent mucoid degeneration and fibrosis. The pathologic process, however, was not limited to this cellular pathology. As already intimated, sebaceous glands situated at two or three follicles' distance toward the distal normal tissue, were also in a state of adenomatous proliferation and, occasionally, intervening sweat-glands were similarly involved, although showing as yet no evidence of direct invasion. In other words, the stimulus, whatever its nature, manifested its influence beyond the recognizable sphere of morphologic change.

The chief zone of pathologic activity, whose center conformed to that of the narrow infiltrated spreading border of the lesion, consisted of a uniformly well-conserved ring of proliferating adenomatous cellular tissue, which extended itself by means of bud-like processes and invaded surrounding tissues. The clinical process of the growth is measured by the character of this ring. It apparently follows a course of least resistance, and reaches its greatest degree of progress and development in tissue rich in glandular structure. Wherever its continuity is seriously threatened, the clinical progress of the case is correspondingly arrested. An uneven, irregular outline is often the result. In one case, further progress was arrested at a given point by tissue free from glandular structure—an old pit-mark. Involution follows promptly and is doubtless effected by the self-excited reactionary inflammation. Central involution spontaneously follows as long as reactionary inflammation maintains a healthy balance over that of the pathologic stimulus. Reactionary inflammation is probably the keynote of success in the use of arsenical pastes and other measures, in arresting the clinical progress of these cases.

The case of carcinoma epitheliale cicatrisans was of peculiar interest inasmuch as the pathologic process occurred in tissue which was devoid of all epithelial structure save that of epidermis. Sweat and sebaceous glands and hair follicles were not conserved. The stimulus exerted its effect solely on the epidermis and the pathologic process, which was also benign and self-limited in character and proved to be that of a keratinizing or prickle-cell epithelioma. The actively spreading infiltrated border was the site of down and overgrowth of epithelial pegs from the rete, which contained masses of keratinized cells arranged in nests. Basement membrane was imperfectly preserved, and the process was arrested by a marked inflammatory cellular infiltration. Scar tissue was returned to scar tissue, in this instance, through intermediate epitheliomatous tissue.

Opinion varies, with different investigation, in regard to the origin of epithelial proliferation: Unna[4] and others ascribe it to the epidermis; Fox[5] and others to the hair follicles; Petersen[6] and others to the sweat-glands; Fordyce[7] and others to the epithelium of the epidermis or any of the differentiated structures of the skin. Various authors have endeavored to differentiate the pathology of cancer of the skin in accordance to the type of cellular structure and the source of probable origin. Cases have been described as tricho-epithelioma, if derivation could be traced to hair follicles; cylindroma, if derived from sweat-glands or ducts; baso- or basilar epithelioma if derived from the basement layer of cells of the epidermis or neighboring structures; and prickle-spinous- or squamous-cell epithelioma if derived from the prickle or squamous cells of the epidermis. I agree with Fordyce and others that there are good clinical grounds for the differentiation of this latter class from other histopathologic forms of epithelioma, but not necessarily on the basis of histogenesis. The genesis and fundamental origin of all forms of epithelioma must, in the light of our present knowledge, remain a more or less unsettled question. The question could be elucidated if we could infer that the pathologic ancestral tissue proliferated itself to the exclusion of all other types. This we know, is not true, because other types proliferate synchronously. Furthermore, the cicatrized central area occasionally relapses, and the stimulus necessarily exerts its influence on the only epithelial structure which is left, namely, the epidermis, and a squamous- or spinous-cell epithelioma replaces a so-called basocellular epithelioma which formerly held sway.

Embryonal rests of Cohnheim seems to play a very unimportant rôle in the etiology, from at least a histologic standpoint. While it is clinically true that cutaneous malignancy sometimes takes its origin from moles, etc., and other structures of possible embryonal character, the vast majority of cases present no such etiology. The so-called etiologic strands do not permit the premalignant histologic demonstration. What have been described as strands in process of development and growth are the budding processes of the invading growth. They have never been demonstrated in the normal tissue in the direct path of subsequent invasion.

If malignancy is derived from hair follicles, sweat-glands and other preformed cellular structures, spontaneous development in neighboring tissue and multiple epitheliomas should be more frequent than currently reported.

19 West Seventh Street.

4. Unna: Histopathologie der Haut.
5. Fox: Tr. London Path. Soc., 1879, xxx, 360.
6. Petersen: Arch. f. Dermat. u. Syph., 1893, xxv, 445.
7. Fordyce: THE JOURNAL A. M. A., Jan. 8, 1910, p. 91.

ABSTRACT OF DISCUSSION

DR. RICHARD L. SUTTON, Kansas City, Mo.: I could never consider multiple benign cystic epithelioma as a precancerous condition, and it appears to me that Dr. Heidingsfeld has become somewhat confused in his classification. If we exclude the cases of J. C. White, Stelwagon, the three commented on as examples of rodent ulcer by Adamson and my own, I do not think Dr. Heidingsfeld will find in the literature any other examples of multiple benign cystic epithelioma that have shown malignant changes. Judging from the sections exhibited by Dr. Heidingsfeld, I should say that he is here dealing with three distinct pathologic and clinical diseases; the so-called "Carcinome basocellulare" of Krompecher, the multiple benign cystic epithelioma of Fordyce (the acanthoma adenoides cysticum of Brooke) and syringocystadenoma.

DR. H. H. HAZEN, Washington, D. C.: In discussing the pathology of a lesion, we should bear in mind that while the clinical picture may be malignant, the pathologic findings may show no evidence of that fact. I recall the case of a negress who had a fungating lesion about the size of a saucer on the left buttock, together with enormously enlarged glands in both groins. On section, the tumor was found to be composed entirely of dilated sebaceous glands; it was a cysto-adenoma of the sebaceous glands, and while the clinical picture is undoubtedly malignant, the pathologic picture was benign. This is not an entirely new observation, as both Halsted and Bloodgood have shown that a pathologically benign adenoma of the thyroid may metastasize to the neighboring gland.

DR. M. L. HEIDINGSFELD, Cincinnati: I concur with Dr. Sutton that the so-called multiple benign cystic epithelioma and epithelioma adenoides cysticum (Brooke) are a clinical entity and are not identified with so-called "rodent ulcer" of the skin. This phase was recognized and dwelt on in the paper. I do hold, however, that these affections are premalignant in character and structure, even though it is true that relatively few cases of this character thus far reported in literature have become actively malignant. The reasons therefor are obvious. They are easily and promptly arrested in the premalignant stage, and, secondly, many cases of malignant diseases of the skin come to our notice in such an advanced stage that their origin from these conditions can no longer be recognized. Insofar as skin cancer develops and manifests itself on the basis of such simple conditions as senile and paraffin keratoses, and prolonged irritations of the most simple and trivial character, no one can seriously question the analogy between the so-called "premalignant" types

and true malignancy. In other words, the border line between malignancy and premalignancy is not sharply enough drawn to permit any fine differentiations. I do not concur with Dr. Sutton that these affections can be estimated by their pure histologic structure. Multiple benign cystic epithelioma possesses, in most instances, all the characteristic earmarks of a basal-cell epithelioma, and it not infrequently happens that basal-cell epitheliomas revert to a pure spinous or squamous structure.

DIVERTICULA OF THE GASTRO-INTESTINAL TRACT: THEIR SURGICAL IMPORTANCE *

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ROCHESTER, MINN.

The various hollow viscera and tubular structures of the body are subject to acquired diverticula. Even the large blood-vessels are prone to this condition in the form of sacculated aneurysm.

Fig. 1.—Section showing the coats and character of a diverticulum of the appendix.

Diverticula are classified into two groups, congenital and acquired. For example, a Meckel's diverticulum, or a diverticulum of the urachus connected with the bladder or umbilicus is a type of the congenital anomaly, while a diverticulum of the esophagus is one of the acquired forms.

True and false diverticula are terms describing the condition with reference to their structure, as compared to the normal walls of the viscus. Those covered with all the coats of the bowel, as represented at its site, are the true diverticula, and those with fewer coats and with the muscularis lacking at least in part are the false. True diverticula may later become false by extension beyond their muscular covering, which show in separated bundles over a part of the sac, especially late in life.

The appendix might be termed a normal diverticulum, and the air pouches connected with the larynx in certain species of monkeys might also be so considered. From this latter arose the term "bronchocele," which later was applied to the enlargement of the thyroid gland.

Diverticula of the acquired type are frequently found and described as affecting the gastro-intestinal tract. We note the striking similarity between these sacs or pouches and their process of development. The entire length of the alimentary canal is subject to the formation of congenital, acquired, true and false diverticula. The rare pharyngeal pockets which connect with branchial cysts are to be noted. Another equally rare type is found at the entrance of the trachea, possibly atavistic remains from the branchial pouch in some monkeys. Diverticula of the esophagus are not uncommon and, when small, are frequently overlooked. In advanced cases, when the bougie no longer passes the obstruction and the patient is suffering from starvation, they are quite often believed to be malignant. In some cases the true nature of the condition is discovered only when life has been prolonged, by the aid of gastrostomy, beyond the period prognosticated.

In 1840, Rokitansky[1] described two forms of esophageal diverticula, the pulsion or pressure variety, which is most commonly seen, and the traction variety in the middle third of the esophagus caused by periesophageal inflammation usually developing from inflammation in the glands about the tracheal bifurcation. This variety seldom causes symptoms but they may be increased in size by coughing.

The condition usually develops on the posterior wall at about the level of the cricoid cartilage. The diverticula vary greatly in size, from that of a walnut to a large sac extending into the chest, capable of holding a pint or more of fluid. These latter, because of traction, are more of the esophageal form. The term "pharyngo-esophageal" diverticulum might be applied to many of this variety. Diverticula of any form occur but rarely in the lower third of the esophagus. They are found only at post-mortem.

Opposite the cricoid cartilage there is often a weak or muscle-missing space, called the Lannier-Hackerman area. Here the mucosa, under favorable conditions, may be pushed out from within and, once begun, the tendency is to increase. Thus the sac becomes a prolongation of the proximal gullet while the lower esophagus opens out of the anterior wall of the sac. Arthur Keith[2] states that the superior pharyngeal muscles act as a force-pump while the lower constrictor muscles act as an obstruction. This condition is seldom seen before middle life.

Aided by the radiograph following the liquid bismuth, and by the Plummer[3] test, diagnosis of diverticulum of the esophagus is no longer difficult. The Plummer test consists in having the patient swallow one end of a few yards of silk twist, such as is used by Mixter in treating esophageal stricture. When enough of this thread has passed through the stomach and into the intestine to stand some traction, the outer end is threaded through a perforated esophageal bulb-pointed probe which slides readily down into the diverticulum, the thread being held loosely. The thread is then tightened, and the probe is elevated from the bottom of the pouch to the level of the true esophageal opening and then pushed down into the stomach, thus measuring the depth of the diverticulum as well as its presence.

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* Read in the Section on Surgery of the American Medical Association, at the Sixty-Third Annual Session, held at Atlantic City, June, 1912.

1. Rokitansky: Handb. d. Path. Anat., 1861, iii, 127.
2. Keith: Brit. Med. Jour., Feb. 12, 1910.
3. Plummer: Surg., Gynec. and Obst., May, 1910, p. 519; THE JOURNAL A. M. A., Feb. 25, 1911, p. 560.

Extirpation at one operation effects a cure when the sac is small. Invagination of the sac into the esophagus, as is sometimes done, is not recommended. Operation in two stages is preferred for large sacs extending into the mediastinum. 1. The sac is drawn out of the thorax into the neck. 2. After granulation has closed the cellular space, the sac is removed.

From Jan. 1, 1902, to Jan. 1, 1912, thirteen cases of diverticula of the esophagus were diagnosticated in the clinic at St. Mary's Hospital. Ten of them were operated on and cured.

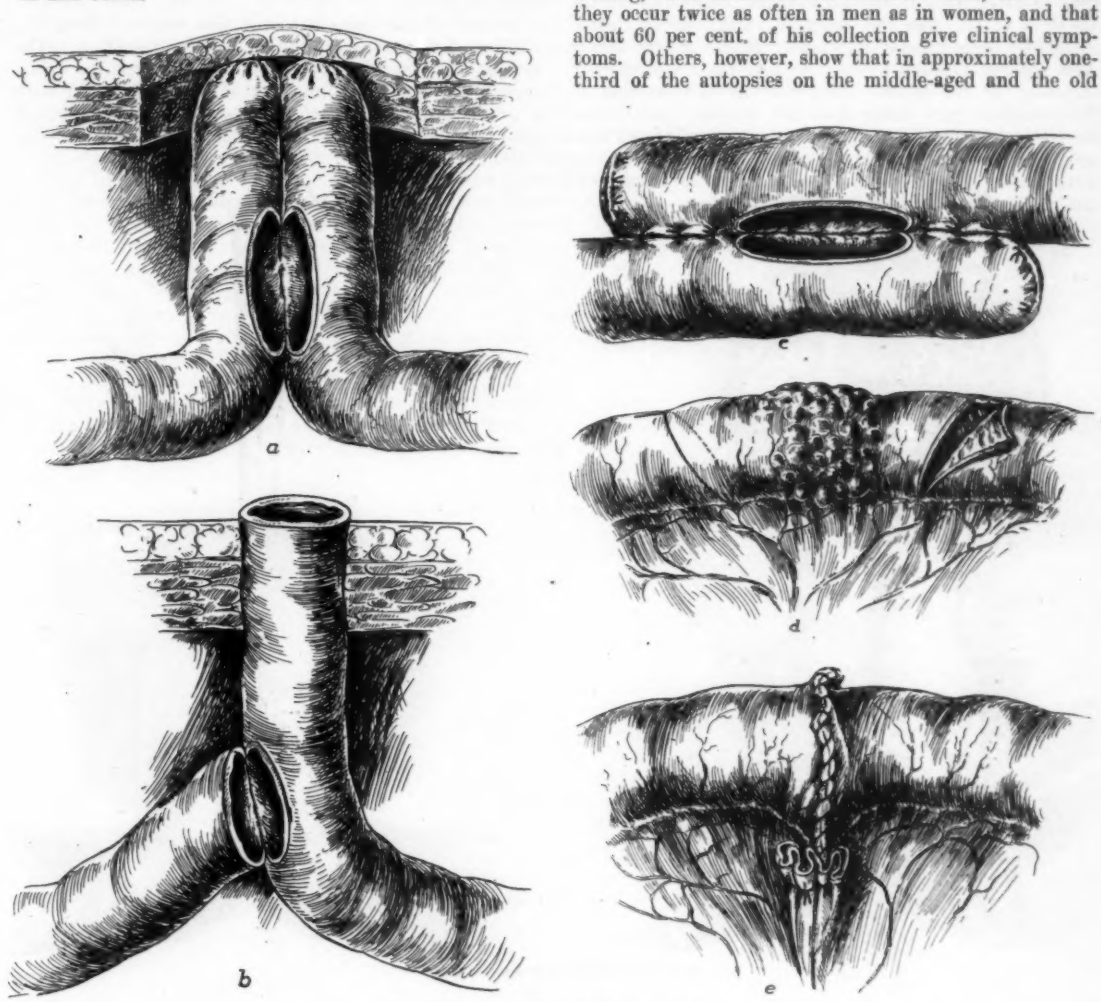

Fig. 2.—Group 1; intestinal anastomosis.

Diverticula of the stomach occur more commonly in the lower animals, namely, the pig family. They are found near the cardiac orifice. But few cases are reported as having been found in man. Keith reports two in which the diverticula were located near the cardiac opening. Falconer[4] reports one found in the pyloric end of the stomach which contained pancreatic tissue. One case was observed in our clinic. This was in a woman, aged 35, with irregular bowel symptoms and a tumor of the anterior wall of the stomach 2 inches from the pylorus. In the outer half of the diverticulum, which was 1½ inches in length, was a well-marked carcinoma. The tumor was excised and a gastrojejunostomy made, neither diverticulum nor malignancy being recognized until after the excision.

Diverticulum of the intestine, which has been described for more than 100 years as an anatomic rarity, is now recognized as an occasional cause of serious disability and danger. The diverticula are often multiple. As many as 400 have been found in one individual. Telling,[5] who tabulated 105 collected cases, shows that they occur twice as often in men as in women, and that about 60 per cent. of his collection give clinical symptoms. Others, however, show that in approximately one-third of the autopsies on the middle-aged and the old diverticula are to be found. The greater number, then, give no symptoms.

No cases have been reported as giving typical symptoms of this condition in the duodenum during life. Clogg[6] and Alexis Thompson[7] report cases similar to the one found in the stomach by Falconer, that is, sacs on the duodenum containing pancreatic tissue. Accessory pancreatic tissue has been noted also in Meckel's diverticulum. Pressure-diverticula may appear late in life in

4. Falconer: Lancet, London, 1907, i, 1296.

5. Telling: Lancet, London, 1908, i, 843, 928.
6. Clogg: Reports Soc. Study Dis. Child., 1908, viii, 221.
7. Thompson: Edinburgh Med. Jour., 1908, xxiii, 304.

the wall of the duodenum at about the location of the common duct. Visceroptosis is usually noted in the cases described.

Cases have been observed in our clinic of inflammatory pouches connected with the gall-bladder and extending, at times, to the liver, but more frequently they were found on the surface of the fundus of the gall-bladder, Some of these diverticula are apparently of congenital origin.

The common and hepatic ducts of the liver are subject to diverticula in the presence of obstruction to the delivery of bile into the intestine. Such pockets often contain a large number of stones. Removing the stones and probing through the papilla into the intestine with drainage of the hepatic duct through the opening in the common duct (after Robson's method) has proved very effectual in giving relief; one does not know, however, the after-condition of the sac, and we know that reformation of stone in the common duct is proportionately more frequent than in the gall-bladder.

Meckel's diverticulum has been discussed in a previous report from our clinic[10] in which fifteen cases were collected from 10,600 routine abdominal operations.

Diverticula of the large bowel are common. Even the appendix (Fig. 1) may have one of its own—a diverticulum within a diverticulum. Seventeen diverticula have been discovered in appendices removed at operation in our clinic. It is quite possible that the so-called double appendices which are sometimes reported may be near-by projecting diverticula which develop into appendices epiploicæ.

In one of our cases a tumor was removed from the surface of the transverse colon without resection. The symptoms were of tumor and local peritonitis. Dissection of the excised tumor revealed a diverticulum with a great, inflammatory, fatty mass developing through the chronic peridiverticulitis. The patient was afforded

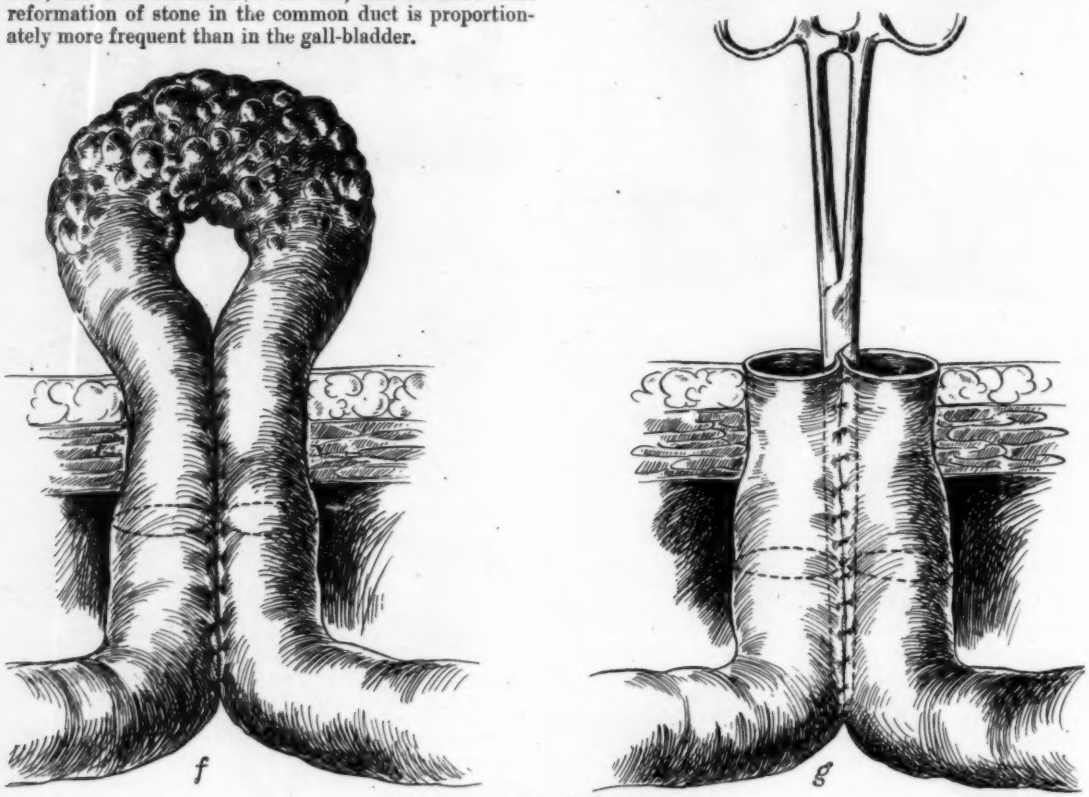

Fig. 3.—Group 2; intestinal anastomosis.

The jejunum and ileum are both subject to the formation of diverticula, which are found along the mesenteric line of the intestine. One reported case[8] showed many sacs projecting into the mesentery between the peritoneal folds, the smaller ones showing a vessel at the end of the pocket which evidently had much to do with their origin. In a few instances only has any intestinal content or other foreign material been found in this type. One such has recently been reported by Walker.[9] Keith believes that they are found only in the pockets in which the entrance is smaller than the sac. They are composed of cholesterin or carbonate of lime.

only partial relief since contraction followed the operation, and three months later at a second operation this portion of the colon was excised with resultant cure. Deposits of such character were observed by Virchow[11] in 1853 and were described as isolated, circumscribed, adherent peritonitis of the colon. From this description which so accurately pictures peridiverticulitis it would appear that the condition is frequently overlooked. A very careful search of the mucosa with the probe in these cases will usually reveal the true condition.

In the sigmoid, the natural fecal carrier of the colon, is found the greatest number of diverticula giving symp-

8. Taylor and Lakin: Lancet, London, Feb. 19, 1910, p. 495.
9. Walker: The Journal A. M. A., April 20, 1912, p. 1190.
10. Balfour: Jour. Minnesota Med. Assn., March 1, 1911.
11. Virchow: Virchow's Arch. f. path. Anat., v, 1853.

toms. In some cases colostomies have been done for the relief of obstruction supposed to be due to cancer of the bowel, and the patient apparently cured, or life has been prolonged so as to preclude the diagnosis of malignancy. The natural inference in some of these cases is that the tumor was the result of the peridiverticulitis.

In our series of twenty-seven cases of diverticulitis of the large bowel we have two in the rectum and one in the anal ring. Five additional cases were observed in operating for other conditions, but no pathologic specimens were obtained. One case was observed in operating for the removal of a large, double intraligamentary cyst. This was a diverticulum of the cecum, located on the outer side 1½ inches from the base of the appendix. It was 1½ inches long and about the size of the little finger. In the one case of non-malignant diverticulitis of the rectum the true diagnosis was made when the tumor was dissected after removal. Undoubtedly cases like this may form some of the perirectal abscesses which open near the anus on the skin and fail to become cured after repeated operations because the high internal opening of the fistula preserves the mucous lining of a portion of its wall. Again, these abscesses rupture into the bladder from the high rectal or sigmoid location. In this emergency gas will be noted passing with the urine. Harrison Cripps[12] estimates that the great majority of these fistulous conditions in the bladder are inflammatory and not malignant.

Diverticula of the large intestine, similar to acquired hernias in other organs, are generally considered the result of pressure. A few of them are probably true

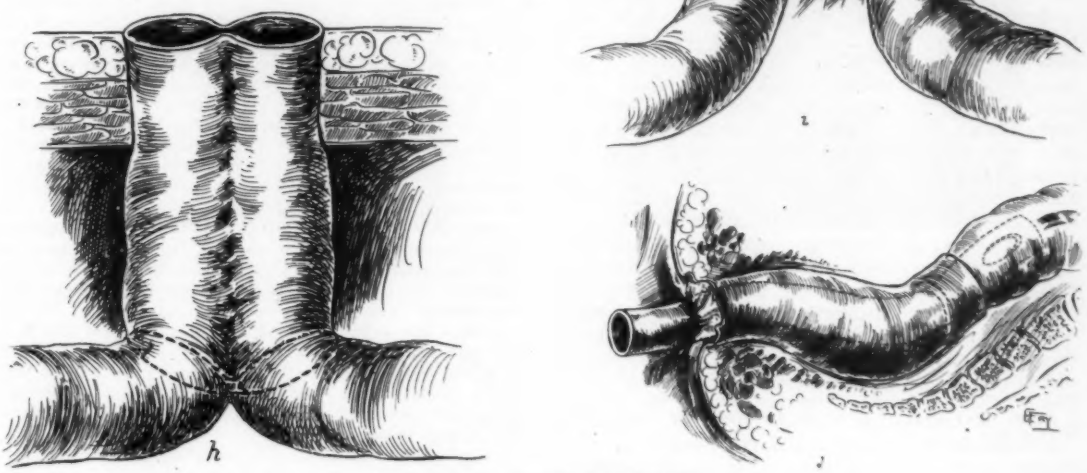

Fig. 4.—Group 3: intestinal anastomosis.

diverticula possessing all the coats of the bowel at their origin, and in the early stage may be barely macroscopic. It is believed that many cases of diverticula originate in openings which have become dilated by congestion of the vessels passing into the bowel on the mesentery, or on the sides of the bowel at the site of the epiploic tags. This phenomenon is similar to the small ventral supraumbilical hernia which originates in openings in the aponeurosis and which has been sawed by the vessels and nerves. A congenital, local defect, with pressure in early life, probably has considerable influence on this development. The circular muscle-fibers give way first, later the longitudinal fibers, and many cases show a rambling between of the diverticula. Wilson[13] has shown that in many cases the condition is one of peridiverticulitis rather than of diverticulitis alone. There may also be diverticulitis of mucosa with peridiverticulitis. Inflammation may be painless, especially in the early stage. In fact, the condition is difficult to diagnose until the subacute inflammation develops a mass of tissue at the site of the diverticulum on the outer surface of the bowel. This inflammation of the intestine then gives symptoms of a secondary nature. The patient has attacks of pain, gas, distention or more or less obstruction with local peritonitis. Because the mucosa is not ulcerated there is little to be observed in the intestinal contents, blood or mucus and diarrhea being the exceptions.

Diverticulum of the large bowel is to be differentiated from tuberculosis, cancer, specific disease, left-sided appendicitis as well as failure of the colon to rotate. In many instances no previous trouble or complaint has existed; consequently the condition was not suspected before operation. We have made a probable diagnosis in seven cases. If a tumor be noted during or after an attack of obstruction, with some local peritonitis, the condition is often considered malignant, yet the lack of common symptoms of that disease makes diverticulum a possible factor. On the other hand, on exploration the peculiar contracted inflammatory appearance of the tumor makes a clinical diagnosis of cancer appear probable in a considerable number of cases which can be

12. Cripps, Harrison: Cancer of the Rectum, 1907.

13. Wilson: Ann. Surg., February, 1911, p. 223.

determined only by section on the microscope after removal. Peridiverticulitis with symptoms from infection with or without perforation or obstruction occurs one-seventh as frequently as cancer of the sigmoid.

In seven of our twenty-seven cases we found cancer grafted on diverticulitis of the large intestine. This was also the case in the diverticulum of the stomach and in several cases of diverticula at the base of the bladder, associated with small stones. It may be noted here that MacCarty and McGrath[14] have shown from a study of 5,000 appendectomies that cancer of the appendix appears once in every 225 cases of chronic appendicitis. Therefore, diverticula affecting the intestine should be looked on as a potential source of cancer.

OPERATION

Anastomosis of the small bowel into the large is probably the safest of all forms of anastomosis, as it delivers liquid contents into the drying bowel. The union of large bowel to large bowel is a more serious question. A resection with bowel-union, at times with preliminary colostomy, is indicated in most cases, or the operation is made in the two-stage Mikulicz method, in which case the tumor is lifted out of the abdomen, the sides of the two loops of bowel are attached to each other for 4 inches within the abdomen, and sutured into the abdominal wound. After four days the tumor is amputated at the abdominal wall, the blades of a pair of heavy forceps are passed one into the proximal and one into the distal ends of the bowel and clamped tight. This procedure requires about five days to cut through by necrosis, thus opening one bowel into the other, permitting closure of the colostomy later. This is especially recommended in fleshy patients whose resistance to infection is likely to be reduced. Bloodgood's[15] method of side-to-side, ends-together anastomosis, with ends of the stump brought into the incision beneath the skin as a safety valve to be opened if desired, is an excellent operation. Methods of suture-union by telescoping and by the use of a long, large-diameter rubber tube passed into the proximal end of the bowel out of the distal intestine and anus are fairly safe, as the line of suture-union and the lower bowel are not subject to gas tension or contamination, all passing out of the tube from the proximal bowel.

Immediate examination of the complete specimen with frozen section, if necessary, is an advantage in such cases and may often change the principle of the operation which has been planned, by proving the absence or the presence of malignancy. The mortality from operation due to varied causes approximates 10 per cent.

14. MacCarty and McGrath: Surg., Gynec. and Obst., March, 1911, p. 211.
15. Bloodgood: Ann. Surg., February, 1909.

Dairy Inspection vs. Laboratory Examinations.—The advocates of dairy inspection overlook the fact that clean milk production is an art, demanding constant daily, hourly and momentary care, and that an accident taking only one second for its occurrence can contaminate the entire day's output of milk and perhaps carry dirt and disease into the homes of hundreds of milk consumers. . . . The factor of highest importance in clean milk production is the man himself and his own impulse to be clean. These things are things beyond the influence of the dairy inspector. The real remedy lies in the direct appeal to the motives of the milk-producer himself. The strongest appeal can be made only by the milk consumers themselves and consists in their willingness to pay the necessary cost of cleanliness. On the part of public health authorities the strongest influence consists in laboratory examination of milk for bacteria.—North in *Clean Milk Bulletin.*

CHRONIC UNOPENED EMPYEMA*

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The application of negative tension in the treatment of acute and subacute empyema is now recognized as one of the practical results of the recent development of thoracic surgery. Furthermore, the cases here to be reported—cases which I would designate as "chronic unopened empyema"—furnish unquestionable proof that extensive chronic empyemas in which the cavities have not been exposed to postoperative pneumothorax and unchecked secondary infection may be cured by this simple means.

CASE 1.—*History.*—S. H., a watchmaker, aged 43, complaining of cough and a discharging sinus in the left loin, was seen at the request of Dr. Lafleur on Oct. 24, 1911. In January, 1905, the patient had had pneumonia and was confined to bed for eight weeks. Subsequently, the persistence of nocturnal cough and the occurrence of occasional attacks of fever and night sweats rendered him unfit for work except for a few days or weeks at a time. In October, 1910, pain developed at the base of the left lung, persisting until July, 1911, when an incision was made over a swelling in the left loin and pus evacuated. Following the operation the cough diminished for a day or two only. Pain was absent when the wound discharged freely, but returned when the discharge lessened.

Physical Examination.—The patient was found to be fairly well nourished. There was dilatation of the venules of the face and marked clubbing of the finger-tips. There was also a frequent cough accompanied by purulent expectoration. Exploratory aspiration at the base of the left lung withdrew thin, odorless pus. Before the needle was removed, an injection of 10 c.c. of bismuth paste was made. The sinus in the loin was injected with the same material. A skiagram (Fig. 1), taken later, showed a narrow tract connecting the bismuth in the intrathoracic cavity with that in the sinus in the loin. It was evident that the empyema had perforated the diaphragm and invaded the retroperitoneal space. Cultures from the pus aspirated from the chest showed, at the end of twenty-four hours, a profuse growth of pneumococcus, with a few scattered colonies of *Staphylococcus albus.*

Operation.—October 26, with the aid of a 1 per cent. solution of novocain, resection of 3 cm. of the tenth rib near its angle was performed, and a large quantity of odorless pus evacuated. As tidal air could be demonstrated, negative tension drainage was established.

Result.—The night following the operation was the first on which the patient had been free from cough since the acute illness in 1905. Within three weeks the patient was able to return to his regular occupation, and at the conclusion of the treatment, three months from the date of operation, he had gained 25 pounds in weight.

CASE 2.—*History.*—P. C., a stone-cutter, aged 30, complaining of cough and weakness, was referred to me by Dr. Harding on Nov. 18, 1911. In December, 1908, owing to weakness accompanied by severe night sweats, cough, expectoration and loss of weight, he was compelled to quit work. In May, 1909, he applied to the Royal Edward Institute, and was placed in the Home Treatment Tuberculosis Class and confined to bed for seven or eight months. Tubercle bacilli were found in the sputum. After his discharge from the class he gained strength gradually but was never strong enough to resume work. About July, 1910, he was admitted to one of the city hospitals, where he remained under treatment for extensive

* Read in the Section on Surgery of the American Medical Association, at the Sixty-Third Annual Session, held at Atlantic City, June, 1912.
* Because of lack of space, this article is abbreviated in THE JOURNAL. The complete article appears in the Transactions of the Section and in the author's reprints. A copy of the latter will be sent by the author on request.

right-sided pneumothorax for a period of three months. Toward the end of this period there were also physical signs of fluid at the right base. Pleural exudate with pneumothorax was subsequently noted, but the fluid was not withdrawn, because at the last examination, six months before operation, the amount was not thought to be excessive and the patient, under open-air treatment, was showing gradual improvement. Cough and an evening temperature ranging from 99 to 102 F., however, still persisted.

Following the aspiration of 10 ounces of pus from the right pleura on November 17, before admission, the evening temperature remained normal for the first time since July, 1910, that is, since the onset of the pneumothorax. November 18, on admission, the patient was slightly dyspneic and cyanosed. There was absolute dulness on the right side of the chest below the level of the third dorsal spine. There were also signs of chronic tuberculosis in the upper lobe of the left lung. Between November 19 and December 6, six additional aspirations of the right pleura were carried out, and in all 142 ounces of pus were withdrawn. From the pus withdrawn on November 22, pure cultures of the influenza bacillus were obtained on blood agar.

Operation.—Dec. 9, 1911, under local anesthesia with 1 per cent. novocain, from 2 to 3 cm. of the ninth rib in the anterior scapular line were resected, and after the application of a negative tension drainage apparatus, a further quantity of pus was evacuated.

Result.—At the present time, six months after operation, there is almost complete obliteration of the cavity on the right side, and the patient has gained 13 pounds in weight.

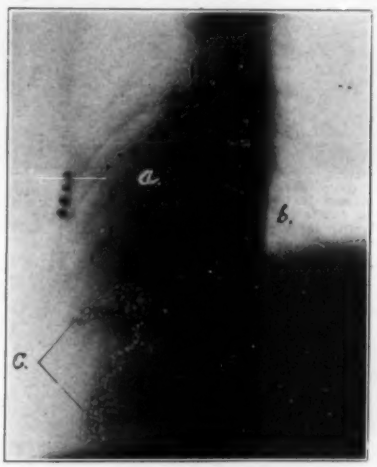

Fig. 1.—Case 1.—Skiagram, dorsal view, showing: (a) extensive shadow with irregular upper margin over lower lobe of left lung; (b) complete absence of heart shadow to right of vertebral column with retraction of mediastinum toward the diseased side; (c) dense bismuth shadow above in empyemic cavity, below in retroperitoneal cavity, the two being connected by a narrow tract.

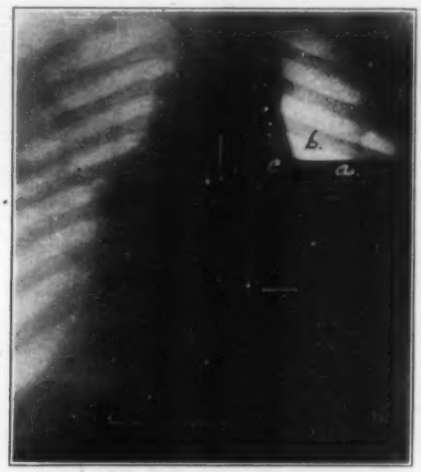

Fig. 2.—Case 2.—Skiagram, dorsal view taken Nov. 19, 1911, after second aspiration of 22 ounces of pus, showing: (a) sharp line of upper limit of fluid at level of articulation of sixth rib with vertebral column; (b) air vesicle above line of fluid; (c) collapsed lung represented as a narrow oval area in close relation with the spine and extending from lower border of fifth rib to seventh interspace.

This case was characterized not by infiltration of the pulmonary tissues, but by complete collapse of the lung. The definition and uniformity of the upper limit of the fluid in the skiagraphic plates (Fig. 2) attested to the presence of both lung collapse and gas above the level of the fluid. The absence of mediastinal infiltration and fixation was shown radiologically (Fig. 3) by the hydrostatic effect of the fluid on the mediastinal septum, when the patient assumed the left lateral position. The unbroken level of the upper limit of the fluid in this position pointed further to the absence of adhesions between the visceral and parietal pleuræ. In view especially of this demonstrated mobility of the mediastinum, aspiration at intervals was first employed in the hope of lessening the pleural area exposed to the secondary infection which would necessarily follow thoracotomy and drainage. Each aspiration was carried to the point at which the patient complained of a dragging sensation within the chest, the development of this symptom, on the first occasion, furnishing the important information that the pneumothorax was closed. The skiagraphs portray the effect of negative tension on the collapsed lung, the mediastinum, the diaphragm and the chest wall (Figs. 2, 4, 5, 6, 7, 8, 9, 10).

The results of the clinical application of negative tension correspond so closely with those obtained in artificially produced cavities in animals, that I take the liberty of showing a photograph (Fig. 12) of a specimen illustrating the capacity for readjustment and compensation possessed by the diaphragm, the lungs and the mediastinal contents.

While radiography gives valuable information as to the effect of negative tension on collapsed lung, only stereoradiographic records are capable of depicting the degree of expansion in more than one plane. The interpretation of these records is, however, most difficult, and their cost almost prohibitive, if frequent exposures are necessary. Thus we are without means of gauging accurately the rate of obliteration of cavities. To meet this defect I have made a number of observations on the quantity of air withdrawn in inducing the desired negative tension. An approximate estimate of tidal air (that is, the amount of air which, in the presence of open thoracotomy, would pass in and out of a cavity with each respiration) may be made by immersing the end of the collecting bulb in water at the end of expiration and reading off the number of cubic centimeters of fluid drawn into the bulb during inspiration. This estimation is of value chiefly in determining the time at which negative tension should be discontinued, the presence of tidal air being an absolute indication for its maintenance. Early estimations of tidal air are contra-indicated, because it is necessary to release any negative tension remaining at the end of expiration and this may result

in the destruction of newly formed pleural adhesions. Further, the estimation of tidal air in large cavities gives one no idea of the amount of air still remaining. Again, the exclusion of tidal air alone is not sufficient to promote rapid expansion, as the minimum negative tension thus induced, that is, the negative tension persisting at the end of expiration, does not exceed 2 to 3 mm. of mercury. In chronic cases it has been my practice to leave the cavity under a minimum tension of 5 mm., this minimum corresponding to an average inspiratory maximum tension of 12 mm. To determine the quantity of air removed in order to secure a minimum tension of 5 mm., I have collected it by the usual means employed for the collection of gases, illustrated in Figure 13. Although a small bellows with one-way valves is inserted in the line of the distal tube leading to the collecting cylinder, it is not necessary to employ this means of exhausting the cavity. Starting with a minimum tension of 2 mm. of mercury, I have found it more practical simply to instruct the patient to cough in a smothered, jerky way until the desired reading is secured on the manometer. This estimation, if taken at each dressing, is an accurate guide as to the rate of obliteration of the cavity. For lack of a better term I have called the air thus collected "complementary air." By coughing, the minimum tension may be raised, in large cavities, even to 10 mm.; the extra amount of air thus withdrawn in comparison with the increased tension secured is, however, very much less than that withdrawn between the minimum tensions of 2 and 5 mm. From the accompanying table it will be seen that the diminution in the amounts of complementary air (as well as in that withdrawn between the minimum negative tensions of 5 and 10 mm.) is apparently very much more rapid than is the process of reexpansion, as shown in the single plate records. This is to be explained by the unobserved reexpansion of the lung in the antero-

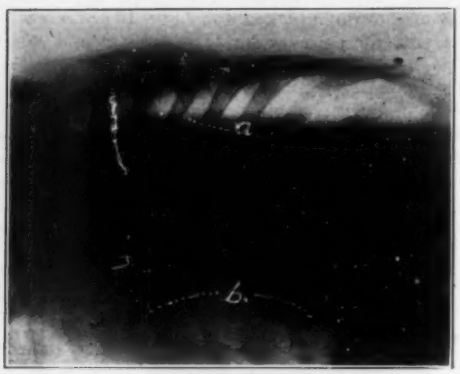

Fig. 3.—Case 2.—Skiagram, November 21, left lateral position, dorsal view, showing: (a) unbroken level in line of fluid denoting absence of pleural adhesions; (b) uniform line on the opposite side of the chest, parallel to line of upper limit of fluid, indicating deflection of the mediastinum, especially in its upper part.

Fig. 5.—Case 2.—Skiagram, dorsal view, taken November 25, after fourth aspiration of 30 ounces of pus, showing: (a) fluid at level of seventh interspace, adjacent to spine; (b) marked progress of reexpansion of right lung.

Fig. 4.—Case 2.—Skiagram, dorsal view, taken November 22, after third aspiration of 30 ounces of pus, showing: (a) fluid at level of vertebral articulation of seventh rib; (b) increase in area of collapsed lung.

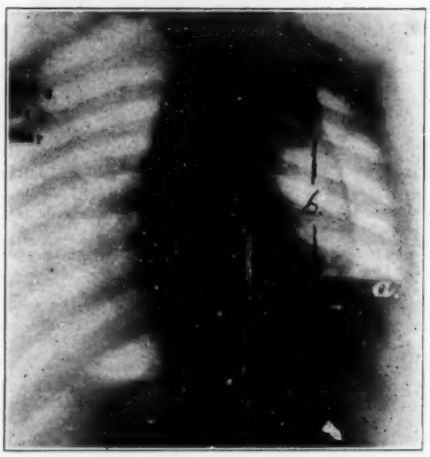

Fig. 6.—Case 2.—Skiagram, dorsal view, taken November 29, after fifth aspiration of 20 ounces of pus, showing: (a) fluid at level of ninth rib at its articulation with the spine; (b) still further reexpansion in the right lung.

posterior direction, by the rise in the diaphragm, by the narrowing of the intercostal spaces on the side of the cavity (that is, vertical shortening), and by the compensatory changes in the other lung.

The most important lesson to be drawn from these clinical observations is that in chronic unopened empyemas, that is, in empyemic cavities which have not been exposed to postoperative pneumothorax, thickening and

Fig. 7.—Case 2.—Skiagram, dorsal view, taken December 14, five days after thoracotomy and the establishment of negative tension drainage, showing: (a) the enormous sectional area of the cavity; (b) slight recession of the lung compared with last record, owing to temporary exposure to atmospheric pressure.

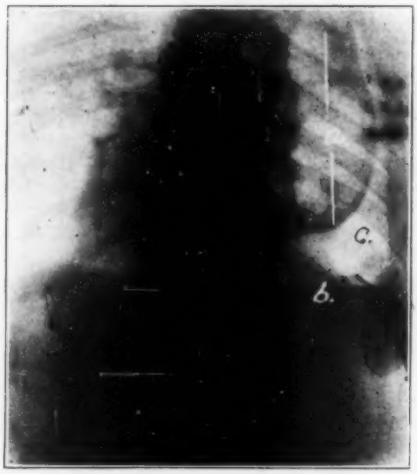

Fig. 8.—Case 2.—Skiagram, dorsal view, taken Jan. 17, 1912, showing. (a) further reexpansion of the lung; (b) rise in diaphragm; (c) marked reduction in the sectional area of the cavity; (d) approximation of the ribs of the side of the cavity (i. e., vertical shortening of the cavity), and their separation on the left side.

fixation of the walls are not always to be looked for, and conversely, that the greatly thickened and rigid visceral pleura seen in chronic empyemas which have been drained in the usual way, may be assumed in many cases to be the product of postoperative pneumothorax and the accompanying secondary infection.

One, and not the least, feature of the negative tension method of drainage is that it induces the free transudation of active serum, which tends to suppress suppuration and later to promote the development of healthy pleural granulations, the union of which is essential to secure permanent anchorage for the reexpanded lung. It is not sufficient that the lung should reexpand; it is necessary that there should be some means by which reexpansion may be maintained, and this is found in the union of the granulations covering the pleural surfaces.

Whatever the form of apparatus employed, the one essential is the constant maintenance of a partial vacuum within the cavity. The apparatus used in the cases

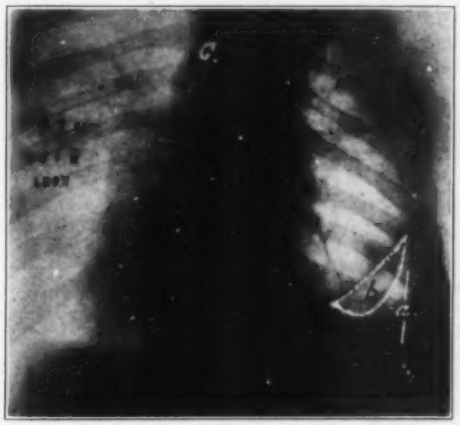

Fig. 9.—Case 2.—Skiagram, dorsal view, taken April 13, 1912, showing: (a) almost complete obliteration of cavity in sectional view; (b) descent of posterior inferior border of lower lobe; (c) deflection of the upper portion of the mediastinum and its contents toward the cavity.

Fig. 10.—Case 2.—Photograph of superimposed tracings of seven *x*-ray records showing stages in reexpansion of right lung.

reported has been previously shown and described by me, and in my own hands has proved most satisfactory in preventing pneumothorax. Its suitability for ambulatory treatment adds greatly to its usefulness and efficiency. By its use the average period of retention in hospital is reduced by at least one-half. The infrequency of the dressings is appreciated by the patient. Success depends entirely on attention to detail in its application. For the guidance of those who may wish to employ this apparatus, I append notes on the technic of the dressing.

DIRECTIONS FOR THE RENEWAL OF NEGATIVE TENSION DRESSING[1]

A supply of sterile felt pads and dentist's rubber dam should be kept on hand, as these materials should be renewed at each dressing.

The pads, made from piano felt, should be exactly the same shape and size (4.5 cm. by 8 cm.) as the oval rubber shoulder which is drawn on to the drainage tube after the adjustment of the pad and the rubber dam. The central perforation in these felt pads is best made with a tubular cork-cutter, a little smaller in diameter than the drainage-tube.

The rubber dam should be cut into pieces 8 cm. by 11 cm., with a central perforation for the passage of the tube 3 or 4 mm. in diameter, that is, a perforation much smaller than the tube, in order that, when drawn on, there may be a reflection outward of the rubber dam on the tube. This reflected portion is firmly grasped by the margins of the perforation in the oval rubber shoulder, forming an air-tight union at this point.

Two tubes — to be used at alternate dressings — are necessary to avoid delay.

Fig. 11.

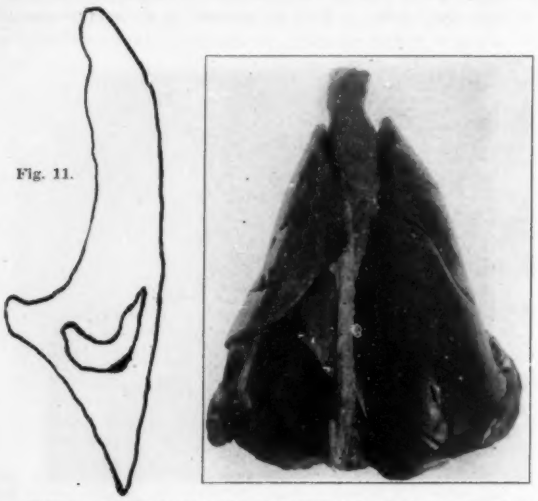

Fig. 11.—Sectional area of cavity as seen in single plate records, Dec. 14 and April 13.

Fig. 12.—Photograph of specimen from Dog No. 51, dorsal view. June 29, 1910: excision of left lower lobe under positive differential pressure; thorax closed in expiration. Killed Aug. 31, 1910, shows: (a) compensatory enlargement of the left upper lobe and the whole of the right lung; (b) upward retraction of the left leaf of the diaphragm. The altered position of the gullet at the level of the cavity is an index of the capacity for rearrangement possessed by the mediastinal structures.

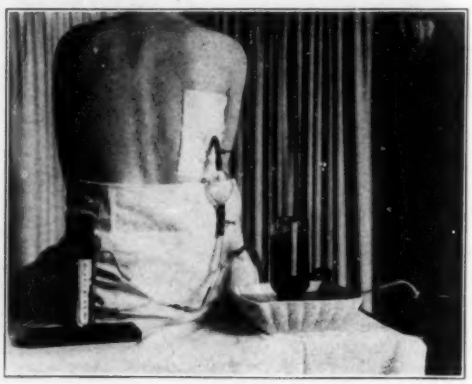

Fig. 13.—Apparatus for collecting and measuring air withdrawn from empyemic cavities under various tensions.

1. See also Ann. Surg., July, 1911.

STEPS IN DRESSING

1. As the tube is being removed, plug the sinus with gauze or cover the opening with a small Bier's cup to prevent ingress of air.

2. Cleanse with petrolic ether the skin surface covered by the adhesive strips.

3. Smear the skin with the following ointment: phenol (carbolic acid), 1 per cent.; zinc oxid, 15 per cent.; yellow petrolatum, 100 per cent., the petrolatum to have a melting point of 104 F. The use of this ointment prevents excoriation and also increases the adhesive properties of the zinc oxid plaster.

QUANTITY OF AIR WITHDRAWN IN INDUCING A MINIMUM NEGATIVE TENSION

(Case 2)

Date	C.c. of Air Withdrawn in Inducing a Minimum Negative Tension of		Tidal Air, c.c.
	5 mm. of Mercury	10 mm. of Mercury	
12/16/11	900-1,000	...	..
12/30/11	750	...	..
1/10/12	700	...	..
1/17/12	600	...	..
1/31/12	450	...	..
2/10/12	400	...	..
2/24/12	350	...	..
3/ 9 /12	300	...	..
3/20/12	250	...	60+
3/23/12	230	...	50
3/30/12	200	250	22
4/ 6 /12	160	190	15
4/10/12	150	175	10
4/13/12	145	165	10
4/17/12	110	155	—
4/20/12	80	130	10
4/24/12	50	80*	—
4/27/12	50	70	10
5/ 4 /12	50	60	8
5/ 8 /12	50	60	8
5/11/12	50	55†	8
5/15/12	45	50	—
5/17/12	30	40	—
6/ 1 /12	25	35	—

*8 mm †7 mm.

4. Fit together the various parts of the apparatus with the exception of the bulb, and smear the felt pad with the same zinc ointment.

5. While the patient holds the breath in expiration, insert the tube with its valve closed.

6. Apply the adhesive strips. There should be six of these—four 2½ by 7½ inches, and two 2½ by 5 inches. These strips should be prepared from the fresh roll, the adhesive surface of which has been covered only with gauze. Spool-plaster and plaster which has been prepared from the piece and rolled on itself are defective in adhesive properties and unsatisfactory for this purpose. See that the sheet of rubber dam lies smoothly on the skin, but without being stretched. Apply first a long transverse strip above; second, a long transverse strip below; third and fourth, short side strips; and fifth and sixth, long transverse strips above and below, overlapping the side strips and taking in a further area of uncovered skin. The strips should be warmed before application.

7. Apply a gauze pad and bandage over the whole dressing.

8. Insert the glass bulb with the trap toward the chest cavity, and with the nozzle of a collapsed Politzer bag in the lower tube, open both valves. If the cavity is large, the Politzer bag may expand entirely, in which case it should be emptied and again applied until it remains collapsed. Then close the lower valve. The cavity should be exhausted at least twice a day, and always after the bulb is emptied. Continuous suction with the Politzer bag is not desirable in acute cases, as it promotes profuse serohemorrhagic discharge. In chronic cases the negative tension may be increased by further aspiration with an air-tight syringe. A common glass syringe with a rubber-rimmed piston is quite satisfactory for this purpose.

The dressing should be changed every four days.

If capillary leakage occurs (and it is apt to occur in the earlier stages of an acute case) simply wipe the margins of the dressing dry and apply additional adhesive strips.

210 Peel Street.

THE SURGERY OF CHRONIC INFECTIOUS DISEASES OF THE LUNG *

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At the Chicago meeting of the American Medical Association in 1908, a symposium on thoracic surgery was presented before the Section on Surgery. The value of differential pressure in thoracic operations was the chief topic of the symposium. The experience of the readers at that symposium had been essentially experimental; they had been performing operations on animals which, previous to the employment of apparatus, had been regarded as impossible.

In the four years which have since elapsed, many thoracic operations on human beings have been done under the different forms of plus and minus pressure, and another equally successful method — intratracheal insufflation — has been introduced.

Apparatus has been used in many of these operations to test the efficiency of a given method or mechanism, although such operations had previously been successful without apparatus. It has been employed by some surgeons as a routine in thoracic cases, sometimes, perhaps, to accumulate a group of cases with which the inventor may justify the success of apparatus which he has designed. Intratracheal insufflation has been employed in some chest operations, not necessarily to combat pneumothorax, but to provide an ideal anesthesia. A very limited number of operations are recorded in which the operator can honestly claim that the case would have been less successful without the use of apparatus. Some operations have been undertaken which were regarded as unjustifiable until these several methods were introduced. The mortality of these cases has been high, but unquestionably lower than had the attempt been made without apparatus.

From this maze of recent literature, enthusiastic demonstrations of apparatus, controversy as to choice of methods, and descriptions of new thoracic operations never yet perhaps successful in the human being, it is perhaps time to unearth some such conclusions as the following regarding the actual contributions which these artificial aids to respiration have rendered to thoracic surgery.

Operations for acute and chronic empyema and acute postpneumonic abscess may be performed with equally good results without the use of apparatus.

Any extensive thoracic operation for non-infectious lesions in the absence of adhesions is, by the exclusion of the dangers of wide-open pneumothorax, deprived of at least one of its former dangers. This includes exploratory operations for diagnosis, excisions of tumors or strictures of the esophagus and cardia, tumors of the chest-wall not involving the lung, diaphragmatic hernias, traumatic heart lesions approached transpleurally, and intrathoracic lesions requiring blood-vessel suturing. To these the cautious operator may add any operation on the chest in which there is the possibility of accidental opening of a normal pleura. In these cases apparatus is unquestionably indicated. They represent a new field in thoracic surgery, and despite the hitherto limited successes, progress is evident.

In bronchiectasis, chronic abscess, tuberculosis, and actinomycosis, and tumors of the lung and pleura, pneumothorax is *a priori* not a great danger, because of the ever-present adhesions. It cannot be claimed that either differential pressure or intratracheal insufflation have as yet bettered the results in operations for these diseases. Intratracheal ether, however, provides the best anesthesia for this group, and with its accompanying insufflation supports an already limited respiratory function.

From this preliminary summary of the real indications for apparatus, I turn to the main subject of this paper, namely, the surgery of chronic lung infections — diseases admittedly beyond cure by medication.

The number of invalids slowly succumbing to these diseases is greater than is recognized. Realizing the hopelessness of medication and the inadequacy of operative treatment, practitioners rarely send such patients to hospitals, and at the present time they are to be found also in the institutions for chronic diseases. That these chronic infections are amenable to surgical treatment cannot be denied, despite its present doubtful status; and it may be argued that our attention should be devoted to progress along these lines, as well as to the development of the more radical procedures for non-infectious conditions.

Evidences from experimental and clinical experiences tend to show that the surgery of the future in tuberculosis, bronchiectasis and chronic abscess of the lung will consist in conservative rather than radical measures. The conservatism of the past has perhaps been erroneous. It has consisted largely in the attempt to drain lung cavities resulting from any of these three diseases. The drainage of tuberculous cavities has not been attended with cure because of the diffuse nature of the disease. Even though only one cavity of inconsiderable size may exist, the tuberculous infection is invariably more extensive and remains unrelieved. Drainage of bronchiectatic cavities has rarely been followed by cure, and seldom by improvement. Rarely does one cavity exist alone. The profuse sputum results from the confluence of the contents of many smaller cavities, even though the process be confined to one lobe of the lung. In chronic abscess of non-influenza origin, multiple foci are frequently present, surrounded by chronic pneumonic thickening. The rigidity of the surrounding tissues tends to prevent the healing of these drained foci, and bronchial fistulas and chronic sinuses persist, sometimes diminishing the amount of sputum but rarely curing the patient.

* Read in the Section on Surgery of the American Medical Association, at the Sixty-Third Annual Session, held at Atlantic City, June, 1912.

Lung resection is obviously the idealist's ambition in attacking bronchiectasis and chronic abscess. The successful removal of a lung lobe in selected cases would undoubtedly result in cure. The recent successes in resection of lung lobes in normal animals necessarily stimulate us to like procedures in the human. The total removal of the lower lobe for lobar bronchiectasis and chronic abscess confined to the lower lobe will doubtless be the ultimate source of cure in some instances; but attempts to perform this operation in one radical procedure have thus far failed. I have recently added one more case of successful lobar excision to a limited number on record. In none of these cases was excision accomplished in a one-stage operation. Excision was the terminal procedure, following a series of preliminary drainage operations which had resulted in a collapse of the lobe with shrinkage of the inflamed tissue, often accompanied by empyema. These excisions have generally been the accidental but not the originally conceived outcome of the treatment. Is it not conceivable that we should attack these cases with ultimate excision in view, performing preliminary operations to produce collapse and shrinkage, thus preparing the chest-wall, as well as the lung itself, for an excision operation?

The value of compression or immobilization is twofold. It not only prepares the lung lobe for subsequent excision, should such prove necessary, but is of therapeutic value in itself. The capacity of contained cavities is reduced, cicatrization is favored, and with the diseased part at rest, the lymphatic circulation is retarded and toxic absorption is diminished.

A hydrothorax or pneumothorax occurring spontaneously in the course of lung tuberculosis was once regarded as unfavorable. In late years the compression resulting has proved to be beneficial, and internists do not remove fluid or air unless symptoms of undue pressure occur. Spengler reports cures in twelve such cases. The pneumothorax incident to trauma of the lung tends through compression of the lung to arrest or prevent hemorrhage.

Lung compression may be artificially produced by four methods. Nitrogen gas or fluid may be introduced between the pleural layers, causing artificial pneumo- or hydrothorax. The chest-wall may be rendered collapsible by the resection of many ribs from the first or second to the ninth inclusive. In this operation the pleural cavity is not opened. The pulmonary arterial supply to a lobe may be cut off. An interalveolar connective tissue formation results, and a shrinkage of the whole lobe occurs.

The fourth method is that which results from rib resection and opening of the pleural cavity, followed by pneumotomy for abscess or cavity drainage. An empyema generally results, and, as in all empyemas, the lung becomes more or less collapsed. A pyothorax thus produced, will, as in artificial pneumothorax, result in lung compression. As stated above, this source of compression has never been deliberately produced, but has in each case preceded all the recorded successful resections of infected lungs.

Reasonable as this theory of compression therapy may at first seem, the question arises as to how far practical application has determined its value. As in all surgical procedures, the success has in part at least depended on the selection of the method of compression best suited to the nature of the disease.

The best, and to my mind the only, surgical treatment of pulmonary tuberculosis is lung compression produced by the injection of nitrogen gas into the pleural cavity. Murphy of Chicago advocated this method before the American Medical Association fourteen years ago. Forlanini, Brauer and Schmidt have in these years employed the treatment constantly. The specialists in tuberculosis in this country are now undertaking it.

I have made almost fifty such injections, twenty of which were preceded by an incision to the parietal pleura.

It is surprising how rarely adhesions prevent the establishment of a pleural space. Compression to a greater or less extent is generally possible. The collapse of cavities reduces the retained secondary infectious material. Consequently, fever is frequently reduced even to normal; night sweats often cease and the general condition of the patient is so improved as to permit work. In other words, the symptomatic relief attending pneumothorax therapy in tuberculosis is ever present. This relief alone justifies the treatment. Many cures are now on record.

With this method of attack on tuberculosis advanced beyond hope of relief by hygiene, there is little occasion to employ any other compression therapy in this disease.

An extensive resection of ribs in a phthisical patient to produce compression, which may likewise be accomplished by the injection of nitrogen gas into the pleural cavity, is eminently unsound. Furthermore, it is open to question whether this pleuropneumolysis rib resection operation of Friedrich should be performed even on patients in whom pleural adhesions are too extensive to admit an artificial pneumothorax injection.

Bronchiectasis continues to face surgical interference with stubborn resistance, and yet I constantly see cases with a localized process in one lobe of one lung, which must eventually yield to surgical relief, when we perfect the technic. There is no case of bronchiectasis on record in which a complete cure has resulted from the pleural injection of gases or fluid. The condition has been relieved and the sputum quantity diminished, but the process does not succumb to compression therapy alone, as might be expected.

Two of these compression methods have been employed in bronchiectasis. I have lost two out of three patients in attempting the extrapleural rib resection method. The operation itself was withstood by all three. The fatal issue has been the postoperative retention of the ever-abundant sputum. The large operative wound causes pain in coughing. The infectious material remains stagnant in the infected side, and the lymphatics and blood circulation transmit the infection to new metastases. The nitrogen injection method in bronchiectasis does not prevent coughing and continued bronchial drainage. Of the compression methods it is perhaps the safest one; but it is obvious that compression alone will not favor the healing processes in bronchiectasis as it does in tuberculosis.

When the process is lobar, why not deliberate excision? The obstacles to such an operation are too numerous to enumerate here; suffice it to say that the attempts at a one-stage operation have universally failed.

I believe that our one hope of attacking bronchiectasis is by a preliminary compression followed by excision. This has been accomplished not premeditatedly, but in cases in which a compression has resulted from previous operations, and excision has been done successfully. If this combined treatment is to be accomplished, what method of compression should be previously employed? That depends on the case in hand. In no case should

extrapleural rib resection be used. Artificial nitrogen pneumothorax may be employed if adhesions are not too extensive. Drainage of a well-localized cavity, if large and near the surface, may relieve some of the post-operative sputum accumulations. Another operation through the first wound may drain another abscess. The remaining lung tissue is then an organized shell of pneumonic tissue. More ribs may then be resected, and the lobe excised.

Another interesting method of producing lung compression has been brought to notice by the experimental investigations of Sauerbruch and Bruns. While in Germany three years ago, through the courtesy of Professor Sauerbruch, I was permitted to assist in this series of animal operations in which the pulmonary arterial branch to the lower lobe of one lung was ligated and divided. I have since repeated these experiments on fifteen dogs at the Harvard Laboratory of Surgical Research. The technic is simple under differential pressure. A long intercostal incision is made in the eighth interspace, and a wide-open thoracic wound provided by widely separating the ribs with a rib-spreader. Absence of adhesions in the normal dog permits access through the interlobar fissure to the lower lobe branch of the pulmonary artery. A silk ligature is applied. The wound is closed in layers, beginning with pericostal silk sutures closely approximating the ribs.

These animals were subsequently killed at varying periods in convalescence (from four days to five months) and the autopsies revealed surprising conditions. Dr. Kinnicutt, a pathologist, performed the autopsies with me and studied the sections microscopically. His findings may be summed up as follows:

The ligated vessel presented no clotting either distal or proximal to the tie. Its walls were thickened distal to the occlusion.

The isolated lung lobe was reduced in size and visibly shrunken. There were always adhesions between it and the diaphragm and pericardium. Its color was grayish in contrast to the other lobes.

Microscopically, the prevailing feature was a profuse growth of connective tissue in the intenalveolar spaces, which was sometimes sufficient to obliterate the included air-spaces. This tissue was permeated with new blood-vessels.

The section findings in the experiments by Sauerbruch and Bruns have recently been reported, and they are in most respects identical with those of our experiments.

But two attempts have been made to employ this shrinkage therapy clinically; these by Sauerbruch in two cases of bronchiectasis. He reports improvement, but not cure.

There are reasons for including this as one of our four methods of producing lung compression. Granted that the therapeutic value of the shrinkage itself may be a limited one, the lobe thus changed in form and structure is better suited to subsequent excision.

Of the four forms of compression therapy mentioned, I find myself least enthusiastic regarding the extensive extrapleural rib resection in tuberculosis, bronchiectasis or even chronic abscess. I shall soon report a series of twenty-eight operations on dogs, which I performed by the courtesy of Professor Brauer at the University of Marburg. These experiments consisted in the resection of the second to the tenth ribs either *in toto*, as by Schede's method, or in segments, as by Jordan and Estlander. With instruments specially designed for the purpose, pleural injury was avoided in eighteen of the operations. Operative shock was constant and generally extreme. Collapsing the chest-wall and thus depriving the animal of the function of one lung resulted in labored breathing. A supporting pad to the collapsed chest with a plaster-of-Paris swathe bettered this condition and indirectly supported the mediastinum, thus permitting a better air exchange in the lung of the side not operated on. Six dogs thus treated recovered.

Granted that the flexibility of the mediastinum in the normal dog is far greater than that thickened by disease and supported by adhesions in human beings, this advantage must at least be offset by the lowered resistance of a tuberculous patient. The operative shock is increased, and the accessory muscular respiratory force needed to overcome the sudden change of conditions is already at a low ebb. The fact that a fair percentage of the phthisis patients operated on by Friedrich withstood this procedure does not convince one that its employment is justifiable until all other methods fail, and, I claim, not even then.

To sum up, then, I bring this subject of immobilization and compression of the lung to the consideration of the profession, enumerating the methods that the surgeon may realize the value of a carefully chosen method suited to a carefully selected case.

The repeated injection of a slowly absorbable gas, producing an artificial pneumothorax, is unquestionably of therapeutic value in tuberculosis. If too late for this method, it is also too late for pleuropneumolysis.

Artificial pneumothorax will not cure bronchiectasis. It may serve as a valuable preliminary to lobar excision.

Ligating the arterial supply to a portion of the lung will probably never accomplish more than artificial pneumothorax therapy in tuberculosis. This method is best suited to lobar bronchiectasis. It may prove further to be of symptomatic relief. It should also serve as a valuable preliminary to excision.

In multiple chronic non-bronchiectatic abscess we meet a stubborn foe. The attack should be piecemeal and not too radical; repeated but cautious attempts to drain the peripheral cavities under local anesthesia; incident and subsequent limited rib excision; separating of adhesions from time to time to favor shrinkage and organization of the remaining lung tissue, and finally, excision.

I urge in conclusion that, before entering a thorax infected with one of these chronic conditions, with the hope of a radical one-stage excision of part of the lung, we should pause and consider whether a suitable compression therapy had been duly considered.

374 Marlborough Street.

ABSTRACT OF DISCUSSION

ON PAPERS OF DRS. FLINT,* ROBINSON AND VON EBERTS

DR. WILLY MEYER, New York: Among the diseases of the lungs mentioned in these three papers, I believe that bronchiectasis should be given the foremost place, for the reason that it is not curable by sanatorium treatment, although often attempted, as tuberculosis is. We know that tuberculosis first affects the parenchyma of the lung, and then the smaller bronchi, whereas bronchiectasis primarily affects the bronchi and then the parenchyma.

Dr. Robinson said that if shrinkage of the pulmonary lobe is produced, and later on collapse of the lung, these patients can be cured. This certainly is the correct method of treatment. I am sure that the injection of nitrogen gas, as applied to tuberculous patients, is of no benefit whatever in these cases. Through Sauerbruch and his assistants we know that ligation of the branches of the pulmonary artery

* Dr. Flint's paper will appear in THE JOURNAL later.

is the only thing that will produce proper permanent shrinkage of the lung. If the ordinary physiologic work of the lung is taken away it begins to shrink. The pulmonary artery is the one that simply tends to the exchange of gases, while the bronchial artery feeds the pulmonary parenchyma. After ligation of the pulmonary artery, the parenchyma of the lung begins to shrink and to be transformed into a mass of connective tissue; its pleural covering will become adherent to the costal pleura. If in a second operation, later on, the ribs covering the lobe or lobes are resected, the many larger and smaller bronchiectatic cavities are given another chance to collapse. Within the last three months I have performed this operation twice on the human being, ligating in the one case the branches of the right pulmonary artery that go to the middle and lower lobes, and in the second patient on the left side the branch that goes to the lower lobe, these lobes being the affected ones. These patients continue expectorating during the greater part of the operation, and therefore it is an excellent proposition of foreign surgeons that these patients should not be operated on under general anesthesia. I injected the fourth, fifth, sixth and seventh thoracic nerves at the angle of the rib posteriorly with novocain and epinephrin, making my intercostal thoracic incision between the fifth and sixth ribs.

Before excising a lobe of the lung, we should certainly first try ligation of the pulmonary artery branches, and in the second stage excise a number of ribs in order to produce the needed collapse. It is highly interesting and very gratifying that at least a portion of the cases of tuberculosis have now also come to be regarded as being within the domain of surgery, as far as treatment is concerned. The medical man as well as the surgeon should see that in such cases in which hygienic régime and sanatorium treatment are not benefiting the patient, surgical measures should be resorted to, such as a resection of a number of ribs, allowing the lung to collapse, thus emptying pus cavities, reducing hectic fever and favoring shrinkage of the lung. In this way many patients, who are otherwise lost, may still be greatly benefited.

DR. T. T. THOMAS, Philadelphia: Dr. Robinson in his discussion said that differential pressure is not an advantage in operations for acute empyema. There is probably no such thing as a general or unencysted empyema of the acute type, and these terms are very commonly employed. In that type of empyema, which is by far the most common, the pus collection is just as much localized as in the small, so-called encysted variety. What is more important, I believe that the present fear of opening these empyemas at the very bottom need not exist. Since reaching these conclusions, I have had about six cases and have had no trouble in placing the drainage opening at the bottom of the cavity in any one. In nearly all, the empyema reached the bottom of the pleural cavity and in these a small portion of the eleventh rib near the spine was removed, so that the opening was easily carried to the top of the twelfth rib. The drainage obtained appeared to be perfect in any position the patient could occupy. I believe that it will be possible with such a dependent drainage canal, which of necessity will be very oblique, to have the opening large enough for free drainage and yet too small to admit of air passing in in the presence of the constantly escaping pus which will tend to fill the passage. If this can be provided, I believe that it will prove to be the best protection against a chronic empyema and will obviate the necessity for suction drainage.

DR. CARL BECK, Chicago: I wish to confirm what Dr. von Eberts said about the treatment of chronic empyema with the negative pressure apparatus. This can be done in many ways, also in an ambulatory way, by the method of Bier. Suction with a glass bell over the sinus will greatly reduce the size of the cavity, as can be seen in stereoscopic pictures. This method is not without danger, the danger of hemorrhage. I have seen a severe hemorrhage follow in two cases, although I have used the method in many other cases without accidents and successfully. Therefore, the pressure must be carried out very carefully. As to the extensive resection of ribs, Dr. Robinson is correct in saying that such a resection of a whole chest-wall is followed by a great deal of shock. It can be modified, however, by a simple method, making a resection of the chest-wall a multiple resection, removing small portions of the ribs, so as to allow a compression of the chest-wall, which is so necessary in these cases of empyema.

DR. SAMUEL ROBINSON, Boston: Undoubtedly the question which interests us most is the treatment of empyema. I doubt very much if Dr. von Eberts has been given due credit for intimating that certain limitations exist in connection with the suction treatment. I at one time wrote a paper on the suction treatment of empyema, and I find that since then I have been credited with having recommended external suction treatment in all cases of empyema. I noted with great satisfaction that Dr. von Eberts explained, in the first place, that there was every reason to believe that this particular patient whose case is illustrated was especially suitable for the treatment. It was evident from the skiagram that the tendency of the lung was to come down; that it was not firmly adherent to the visceral pleura; that it was not greatly thickened; and, furthermore, if it had been greatly thickened, as it is in most cases of empyema, his skiagrams would not have shown the border of the lung in the different stages of extension. In other words, this was a suitable case. There are cases suitable for suction drainage and there are other cases which are not. No sane person recommends suction drainage in all cases of empyema. In an acute empyema in which the lung is still movable we may resort to this measure; likewise, in the subacute cases which are so common in every hospital, when the condition has not been recognized until three to six weeks after the crisis of the pneumonia. These are border-line cases, and it is a question whether the lung can be brought down by suction. Therefore, it must be determined at operation whether the lung is held down by thick leather-like adhesions in the form of a membrane. The third group consists of chronic cases in which we have the usual type of thick pleuræ. In this class of cases suction accomplishes almost nothing, and in the attempt to apply it the tendency is to have insufficient drainage and not to overcome the septic absorption to which these patients have been exposed for many months.

DR. E. M. VON EBERTS, Montreal: Dr. Beck referred to the occurrence of hemorrhage following the application of negative tension. I have seen such hemorrhage under two conditions only: (1) when the negative pressure was not controlled —when it was too high and there was oozing in consequence; and (2) in a cavity which was primarily a marginal lung abscess, and in which destruction of lung tissue had taken place. The inner wall of the empyemic cavity was therefore formed of lung tissue. The bleeding took place into the bulb instead of into a bronchus, as is usually the case in hemorrhage in lung abscess. The point is that the tension should be controlled by the use of the manometer. My apparatus is essentially an ambulatory apparatus. The fact that it is such enables one to get the patient up quickly after operation, not only in acute but in all cases, and in acute cases to begin forced feeding at an earlier date. In acute cases the lung may be drawn out in twenty-four or forty-eight hours, but if the tube is then removed, the lung will not remain expanded. It is not sufficient merely to reexpand the lung; it is necessary to have some mechanism by which expansion may be maintained. This is found in the union of the pleural surfaces. This union will not occur in the absence of reparative power. An ambulatory apparatus which enables the patient to be up and about early and to take an increased amount of nourishment is an advantage. Patients appreciate the fact that dressings need not be made frequently, not oftener than twice a week or every four days. The use of this apparatus in acute cases has cut down the stay in hospital about one half. In certain chronic cases the necessary rib resection may be done under local anesthesia in the outdoor department, and the patient sent home immediately thereafter. With regard to the application of negative tension in chronic cases, a good indication is the presence or absence of tidal air. Where one finds, after resection, that one has to deal with a visceral wall which is still pliable, negative tension should be applied, and as long as tidal air persists, it may be taken as an indication that further lung tissue may be reclaimed by suction.

EXPERIMENTAL POLIOMYELITIS IN MONKEYS

THIRTEENTH NOTE: SURVIVAL OF THE POLIOMYELITIC VIRUS IN THE STOMACH AND INTESTINE *

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The view of the nasopharyngeal site of entrance into and exit from the infected body of the poliomyelitic virus has steadily gained support from experiments on monkeys[1] and from observations on cases of epidemic poliomyelitis in man. The recent observations of Kling, Wernstedt and Pettersson[2] of Stockholm have an especially important bearing on this subject. These observers have demonstrated the virus by inoculations made into monkeys, in the mucus contained in washings from the nose and mouth of acute examples of poliomyelitis both during life in patients who recovered, and after death in individuals who succumbed. The virus had previously been detected by inoculation tests in the nasal[3] and buccal mucosa, and in the tonsils[3, 4] in fatal human cases of the disease. The findings of Kling, Wernstedt and Pettersson would appear not only to complete the chain of evidence in support of the nasopharyngeal route of infection in man, but to add still another important confirmation to the prevailing views regarding the sources of infection in poliomyelitis, in that they establish the presence of the virus in the nasal and buccal cavities in cases of poliomyelitis of the meningitic and abortive types in which frank paralysis has not occurred.

But these authors have observed still another situation in which the virus occurs with great constancy, namely, in the intestine, both in the mucus contained within the small intestine, as discovered in fatal cases, and in the washings from the large intestine as determined in patients during life. The regular occurrence of the virus in these situations in human cases of poliomyelitis immediately raises the question of the manner of its entrance into the intestines. Since the virus has now been shown to exist in the nasal and buccal mucous membranes and in their mucus secretions it is presumable that it reaches the gastro-intestinal tract with the swallowed secretions. In this case the virus must be capable of surviving in the stomach and passing out alive, and of resisting the action of the intestinal ferments and bacterial flora. The capacity of the virus to survive in the stomach and small intestine was tested in the following manner:

REPORT OF EXPERIMENT

A milky suspension of the spinal cord of a recently paralyzed poliomyelitic monkey was prepared of which 50 c.c. were introduced by stomach-tube into a *rhesus* monkey that had not been fed for fifteen hours. After the lapse of two hours the animal was deeply etherized, and the stomach and about 20 cm. of the duodenum and jejunum were enclosed separately between ligatures. The ether was then increased and the monkey killed. The two organs were removed and their surfaces washed in sterile saline solution. They were then opened. The stomach was empty except for a quantity of mucus at the pyloric extremity. The intestine was empty. The surfaces of the mucosæ were washed in 50 c.c. of sterile saline solution and the washings collected separately. After agitation each was filtered under pressure through Berkefeld candles. The filtrates were sterile. Four c.c. of each filtrate were inoculated intracerebrally into the *Macacus rhesus* monkeys. The two inoculated monkeys presented the first symptoms of poliomyelitis on the fourth and fifth days, respectively. The animal injected with the filtrate prepared from the intestinal mucus showed symptoms one day earlier than the animal injected with the filtrate prepared from the contents of the stomach. The progress of the disease was similar in the two animals. The muscles of the extremities became weak and those of the trunk paralyzed. Monkey A was etherized on the sixth day and the autopsy performed at once. Monkey B died suddenly on the sixth day from respiratory paralysis. The spinal cord and medulla of both animals showed characteristic lesions of poliomyelitis.

CONCLUSIONS

The deduction from these experiments is obvious. Since the poliomyelitic virus occurs in the nasal and buccal mucus in human cases of poliomyelitis it is inevitably taken into the stomach with the swallowed saliva. The virus survives the action of both the gastric and intestinal secretions and persists for a time in these organs. In human beings it leaves the body, in part, with the intestinal discharges, which are therefore a potential source of infection. It remains to be determined whether in the monkey artificially fed with the virus it also passes out in a viable state with the dejecta.

* From the Rockefeller Institute for Medical Research.

1. Flexner and Lewis: THE JOURNAL A. M. A., Feb. 12, 1910, p. 535; Jour. Exper. Med., 1910, xii, 227. Flexner: THE JOURNAL A. M. A., Sept. 24, 1910, p. 1105.
2. Kling, Wernstedt and Pettersson: Ztschr. f. Immunitätsforsch. u. exper. Therap. Orig., 1912, xii, 316, 657.
3. Flexner and Clark: THE JOURNAL A. M. A. Nov. 18, 1911, p. 1685.
4. Landsteiner, Levaditi and Pastia: Semaine méd., 1911, No. 25, p. 296.

A CASE OF MYOSITIS OSSIFICANS TRAUMATICA *

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ANCON, C. Z.

This is the second case of this relatively infrequent malady seen in Ancon Hospital and is reported because of its rarity.

History.—The patient, an American man, aged 28, has had no illnesses save mumps and measles of childhood. Nov. 22, 1911, while he was cutting a thick sheet of iron at a shearing-machine, the piece cut off, weighing about 50 pounds, was shunted with great force from the shearing-table and struck him on the anterior left thigh, 4 inches above the knee. He was not knocked down but was knocked backward bodily about 3 feet. After the pain resulting from the blow abated somewhat he continued his work but was forced to go home an hour later because of the recurrence of great pain in the thigh and knee. The skin was not lacerated, but there was ecchymosis above and below the knee; the thigh was swollen and the patient experienced considerable pain whenever he attempted to flex the knee. He remained in quarters five and one-half days, at the end of which time the swelling had partially subsided and he could flex the knee about 5 degrees. He noticed at this time that the muscles above the knee were tense and hard and that any attempt to flex the knee more than 5 degrees caused pain as if the muscles would tear apart across the anterior thigh at the point of injury. During the next three weeks the patient had to be given such work as did not require bending of the knees; he walked stiff-legged and when he sat down had to keep the left foot elevated. He had no spontaneous pain but only the sensation of tearing across the muscles when he flexed the leg. At the end of three weeks after his injury he noticed a hard mass the size of a walnut at the place of injury and the muscles of that region seemed hard and stiff in spite of vigorous massage.

* Read before the Canal Zone Medical Society, March 5, 1912.

Examination.—The patient was admitted to Ward 1, Ancon Hospital, two months and one week after his injury, complaining of almost complete loss of function of the left knee and a growing tumor of the left thigh. There were no signs of injury; palpation revealed a hard, slightly movable, painless tumor 4 inches above the left knee, the size of an egg, with a thickening anterior to the femur, but separate from it, extending upward a distance of 4 inches. The patient had a range of motion of about 5 degrees at the knee, which could be forcibly increased to 20 degrees but only with considerable pain and tensity of the muscles a hand's breadth above the knee. Examination of the patient was otherwise negative. A skiagraph showed a shadow of moderate density, lying parallel to but separate from the femur, about 5 inches long and with ribbon-like ends.

Operation.—Under ether the bony mass was excised, but with difficulty, by reason of the intimate adherence of the crureus muscle on both anterior and posterior surfaces. The tumor seemed in fact to lie within and to be a part of the muscle except at one place, an inch in length, where it was attached to the femur and had to be loosened with a chisel. The tissue excised appeared to be a rough fragment of spongy bone 5 inches long and 1 inch wide.

Pathologic Examination.—The report on the specimen, by the Canal Zone Board of Health Laboratory, follows:

The section consists of large areas of spongy or cancellous bone and red marrow, with dense fibrous tissue and striated muscle. The osseous tissue is normal in structure in every respect. The marrow is not very cellular but is, on the whole, that of red marrow with relatively few cellular elements. The mass of osseous tissue is surrounded in part by thick fibrous layers of connective tissue, periosteal in character, containing islands of striated muscle. Some of the muscle-fibers are normal but many of them are reduced in size and have irregular or flattened outlines, containing in their interiors nuclei of cells of connective-tissue type—indicative of chronic inflammatory change. Some of these islands of muscle-fiber are entirely surrounded by bony tissue.

Diagnosis: Metaplastic ossification of muscles.

There are two forms of myositis ossificans, progressive and traumatic. The progressive form is a rare disease of early life characterized by gradual formation of bony masses in most of the muscles of the body and resulting finally in ankylosis of practically all articulations. Traumatic ossifying myositis, of which mine is a case in point, follows one of two kinds of injury. The trauma may be a slight one, frequently repeated; such cases are occasionally seen in cavalrymen, in whom it is known as "rider's bone." These men maintain their grip on the saddle for the most part by the adductor longus muscles and as a result of much riding sustain a sprain or even a partial rupture of the muscle. The effused blood in the muscle organizes and ossifies, forming a hard nodule on the internal thigh, which, I am told, has been mistaken for a fragment of the bony pelvis. On the other hand, the trauma may be a single severe one, as in this case, in which the injury was of sufficient violence to cause a large effusion of blood into the muscle. The theory is that blood and possibly a number of displaced periosteal cells infiltrate the muscular connective tissue and there become metamorphosed into bone by a process of organization. This seems to have been true in a case reported by Binnie, in which a blow by a baseball resulted after eight weeks in a bony tumor the size of an egg in the brachialis anticus.

The salient points of the present case are the relation of the severe trauma to the formation, in nine weeks, of an extensive ossifying myositis which practically destroyed the function of the knee; the location in the crureus muscle and the early excision followed in two and one-half months by complete relief.

Ancon Hospital.

TONSILLECTOMY AND A NEW TONSIL AND NASAL SEPTUM KNIFE

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This little knife is the evolutionary outgrowth of a series of knives and experiments which I have made. While sufficiently delicate not to interfere with the surgeon's view of the operative field, it is amply strong for the work for which it is intended.

The blade is perfectly round, 5 mm. in diameter, and extremely thin, 0.4 mm. in thickness. The face of the blade is flat and stands at an angle of 30° to the long axis of the handle. The shank of the handle extends in a half round stem down across the face of the blade to a point slightly beyond its center. This feature would at first seem to be of no consequence, but is, in reality, of the utmost importance.

It allows of a thinner blade; it permits the sharp cutting edge to be brought entirely up to the stem or shank, on either side at the heel, or slightly under the stem, if desired, thus enabling the blade to cut at the particular point at which it is most necessary for it to cut, namely, close up to the stem of the handle, since nearly all the cutting is done at this point of the blade; another important reason for this stem extending down across the blade is that it serves to guide the surgeon in the depth of his incision in submucous and other nasal work. The back of the blade is slightly convexed, enabling it to follow more naturally the concave bed of the tonsil than would a straight, pointed blade.

It will be found that this knife, owing to its small size and the peculiar shape and angle of its blade, will be ideal for slicing cartilaginous spurs from the nasal septum, and for making the initial incision in submucous resections, as well as for tonsil work.

Before proceeding to explain the use of the knife in throat surgery it may not be out of place to say a word concerning the tonsils and some of the annoying, if not difficult, conditions with which every throat surgeon has to contend.

So far as my experience goes there is no royal road in removing a diseased tonsil. Occasionally we find tonsils which are slightly pedunculated, or protrude far out beyond the pillars and into the fauces and can be very satisfactorily removed with the snare or the tonsillotome. But the tonsil which gives the most trouble, both to the patient and to the operator, is not of this kind—it is the broad, flat tonsil, the one that has undergone repeated inflammatory exacerbations in which the capsule of the deep portion of the gland has been partially or completely destroyed, binding the tonsil down by adhesion to the pillars and to the superior pharyngeal constrictor. Rarely the pillars are absorbed or degenerated at one or more points and the glandular tissue extends beyond its native boundaries. In several cases which have come under my observation the glandular tissue was continuous from the faucial to the pharyngeal tonsil, presenting a most unpromising aspect. Occasionally fissures or crater-like cavities exist in the tonsil, which add to the difficulty.

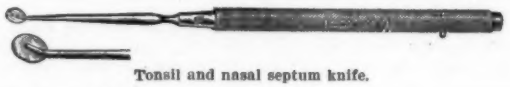
To remove a tonsil in such condition without injuring the pillars, the superior pharyngeal constrictor muscle or some of the adjacent arteries or nerves, requires some cunning on the part of the surgeon. Such an operation under ether anesthesia, even for the throat surgeon, is more difficult than an appendectomy is for an abdominal surgeon, and the danger to the patient's life is greater in the tonsil operation.

Should one undertake the removal of such a tonsil with the snare or the tonsillotome it would at best result in the removal of only a small portion of the gland (tonsillotomy); and should one attempt the dissection with the finger or any other blunt dissector so much force would be necessary that damage would be done to the surrounding parts; the operation would be slow and tedious, and finally the ragged condition of the wound must needs be trimmed to smoothness with some form of scissor-punch.

Therefore, with the majority of throat specialists, the choice of instruments lies between the knife and the scissors, with preference for the knife. While the knife and scissors are dangerous instruments in the hands of an unskilled surgeon in the blood-obscured field of the throat, both these are quite safe in the hands of a skilled throat surgeon, and are the only instruments, within my knowledge, with which a classical tonsillectomy can be done under any and all conditions.

HOW TO USE THE KNIFE

Grasp the tonsil with a small tenaculum forceps (not a large one that will distort the gland) and apply slight traction in the direction which will put moderate tension on the tissue where the cutting is to begin; then, with the knife, cut through the mucous membrane that covers the free surface of the gland. This membrane, which is continuous over the pillars, is tough and yielding, and to divide it with a light touch the knife should be keenly sharp. The first incision through this membrane is usually made between the tonsil and the anterior



Tonsil and nasal septum knife.

pillar, or between the tonsil and the posterior pillar, about midway between the upper and the lower extremities of the gland. With a light cut the blade of the knife passes through the membrane and in between the tonsil and the pillar, when it is carried slightly upward and allowed to cut its way out. Practically all the cutting, after the first incision, is done by cutting from within the tissues outward. This is the chief virtue of this knife, making it very safe.

The tonsil may be entirely circumcised if desired, in this manner, after which straight but gentle inward traction may be exerted on the tenaculum, when a few light sweeping or pulling strokes with the knife will divide whatever adhesions remain between the tonsil and its bed.

In this final stage of the operation care should be taken to follow closely the deep contour of the tonsil, which is not always easy when the deep capsule is obliterated. Severe hemorrhage will almost never occur unless the surgeon cuts into the superior pharyngeal constrictor muscle. The tonsil may be entirely removed at once with the knife, in this manner, if desired. But owing to the difficulty of dissecting out the lower portion of a tonsil with any form of knife or scissors without injuring the base of the pillars or the styloglossus muscle, it is better, after the tonsil has been separated two-thirds the way down, to slip a small wire snare over the tenaculum and finish the dissection with the snare, which makes a very clean and a very safe operation, and one as expeditious as need be. Practically the same procedure is carried out under local as under general anesthesia.

A summary of the virtues of this knife might include: its universal applicability; the small size and thinness of its blade, which enables it to cut easily and in any direction; its circular blade, which renders it less dangerous in the blood-obscured field of the throat; and the particular angle and convexity of the blade on the back, which enables the surgeon to follow more closely the outline of the deep contour of the tonsil.

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ENDOTHELIOMA OF THE LYMPH-NODES OF THE NECK *

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Endothelioma of the lymph-nodes of the neck is perhaps uncommon. In reviewing the literature I found only one reported case. MacLaurin[1] reported a very interesting case in which the nodes of both sides of the neck were involved and the disease had extended into the chest. MacLaurin considered the case inoperable. Fioravanti[2] reports a case of fibrochondromyxosarcoma-endothelioma of the parotid gland. Jackson[3] cites a case of endothelioma of the larynx in which he did a laryngectomy under the assumption that it was a malignant tumor. Bolognesi[4] reports a case of endothelioma of the right submaxillary gland in a patient 39 years of age. The tumor was the size of a hen's egg. There were no adhesions and no other glands involved.

Endothelioma takes origin from the endothelium of the lymph-nodes or blood-vessels, or may arise from serous cavities, e. g., in the omentum. The parotid gland and carotid body are sometimes the site of growth. The structure of an endothelioma consists of clumps of endothelial cells supported by a stroma, which in slowly growing cases becomes widely altered showing hyaline or mucoid degeneration. In the rapidly growing tumors the stroma is ill-marked; the endothelium invades the connective tissue, occasionally making abortive attempts at the formation of cell-nests. Extreme malignancy is seldom seen in endothelioma. Metastases rarely occur. The glands are seldom involved unless by direct growth of the tumor (MacLaurin). Endotheliomas have been regarded as sarcoma.

CASE REPORT

Patient.—W. B., aged 60, white, male, laborer, was admitted to my service at the City Hospital, Jan. 2, 1912, with a provisional diagnosis of inoperable sarcoma. Thirty years previously patient had noticed a small nodule on the right side of his neck about 8 mm. in diameter, a little median and below the angle of the lower jaw. The nodule was freely movable beneath the skin and did not increase in size for five or six years; then it became gradually larger and in the spring of 1911 it was as large as a hen's egg (4.5 by 4.5 cm.); it was irregular and movable. Shortly thereafter a second nodule appeared lower down. These nodules were not painful. During the latter part of 1911 the growths increased rapidly in size and the patient became hoarse and could scarcely speak above a whisper. There had not been any appreciable loss of weight.

Examination.—Patient was well developed and cheerful. Just below the right parotid was a large, firm nodular mass which caused patient to incline his head toward the left. Below this large mass were several smaller masses which

* From the City Hospital, St. Louis.
1. MacLaurin: Australian Med. Gaz., 1909, xxix, 138.
2. Fioravanti: Clin. mod., Florence, 1905, xi, 337.
3. Jackson: Pennsylvania Med. Jour., 1909, x, 662.
4. Bolognesi: Arch. f. klin. Chir., 1910, xciii, 33.

were irregular and of firm consistence. All masses were slightly movable, and palpation did not cause pain. The upper growth did not involve the inferior maxilla. The lowest palpable growth was just above the sternoclavicular articulation. The skin was freely movable over the growths and was of normal color. Pupils were equal and reacted normally. Examination of larynx showed involvement of right recurrent laryngeal. A specimen was removed by Dr. Kinsella and the pathologic department reported the growth to be an endothelioma. Removal was advised.

Operation.—Under ether anesthesia preceded by morphin and atropin, the vessels were exposed just above the sternoclavicular juncture; a Crile clamp was placed on both artery and vein. The usual Z incision was made, the flaps were dissected up and the growths including the sternomastoid muscle, the internal jugular vein and the submaxillary gland were removed *en bloc*. The carotid artery and pneumogastric nerve were more or less adherent to the mass and infiltrated, but owing to the pathologist's report that the growth was not malignant and in consideration of the patient's age, it was deemed advisable not to excise these structures. A small rubber tissue drain was placed in a stab-wound at the lower part of the operative field. The flaps were approximated with catgut.

Postoperative History.—Patient was placed in a sitting posture. On the fourth day he was up and about the ward. The wound had practically healed within a week and the patient was feeling fine, although the hoarseness had not disappeared.

NOTE.—While correcting the proof sheet, I learned that the patient had two lymph-nodes removed from the left side of neck shortly after the first operation, and had developed erysipelas, from which he recovered.

4826 Delmar Avenue.

A NEW CASE OF DUODENAL STENOSIS

JAMES M. ANDERS, M.D., LL.D., PHILADELPHIA

Patient.—Mrs. S. B., aged 56, was admitted to the Medico-Chirurgical Hospital on Jan. 5, 1912, complaining of pain in the right hypochondrium and vomiting. Her family history was negative, excepting death of father from rheumatism. The patient had been in good health prior to four years ago, but since then had had several attacks of illness, which were diagnosticated acute gastritis. Her habits were good, although she had used tea freely. Dec. 21, 1911, following a severe headache and a feeling of weakness, the patient was seized with severe pain in the right hypochondrium, which lasted about three minutes. This pain was not referred, but recurred three or four times daily, apparently without relation to the time of the ingestion of food, until date of admission to the hospital, and was somewhat relieved by vomiting. Following the first attack of pain, jaundice was noticed. After coming to the hospital, her condition showed marked improvement for a time, the attacks of pain and vomiting ceased, and the jaundice diminished considerably.

Examination.—There was some tenderness in the right hypochondrium and a small mass was palpable, which did not move with respiration. An *x*-ray examination did not reveal gallstones, but showed the pylorus to be in relation with the gallbladder region, suggesting adhesions. An examination of the urine revealed a trace of albumin, a small amount of bile, a trace of indican and a few narrow hyaline casts. Cammidge reaction was negative. A blood-count Jan. 6, 1912, showed erythrocytes, 3,860,000; hemoglobin, 80 per cent., and leukocytes, 11,600. Repeated examinations of the feces gave negative results. Jan. 17, 1912, an examination of the gastric contents extracted one hour after a test-breakfast, gave the following result: Reaction, acid; total acidity, 60; free hydrochloric acid, 0.1 per cent.; lactic acid, negative; pepsin, present; starch digestion, stage of erythrodextrin; occult blood, negative; bile, negative; mucus, a small amount.

Up to this time, the patient's condition had been improving, but now vomiting recurred. There was no recurrence of the pain over the gall-bladder region, but the patient vomited frequently large quantities of bile-stained fluid. January 23, there occurred a severe chill, and the pulse became more rapid and feeble. The temperature pursued a very irregular course, varying from a subnormal level to 101.6 F. An examination of the blood at this time showed a leukocytosis of 25,200; the differential leukocyte count resulted as follows: Polymorphonuclear cells, 81 per cent.; small lymphocytes, 7 per cent.; large lymphocytes, 11 per cent., and eosinophils, 1 per cent.

Operation.—January 26, Dr. Ernest Laplace operated and found the duodenum markedly adherent to the under surface of the liver, and kinked at the site of adhesions. Situated between the duodenum and the liver was the much-shriveled gall-bladder. It was necessary to tear away the liver tissue in breaking up the adhesions, leaving an excavation in the liver, considerable hemorrhage resulting. The gall-bladder could not be liberated from the duodenum, and owing to the patient's weakened condition, it was deemed advisable to desist before the operation was completed.

The patient died three days later, and necropsy was refused.

The stenosis of the duodenum in this case was due partly to the constricting cicatrix of an old ulcer and partly to the kinking occasioned by the adhesions. Among other points of interest presented by this case are compression of the gall-bladder and common duct, apparently due to the adhesions either old or recent, accompanied by jaundice, and indications of a secondary acute inflammatory process obviously occasioned by perforation of the duodenum at the site of an old ulcer.

1605 Walnut Street.

SUPERNUMERARY AXILLARY MAMMARY GLANDS

EUGENE G. MATTISON, M.D., PASADENA, CAL.

I have been treating an unusual case for the last three or four weeks. The patient, Mrs. T., was confined May 17, 1912. She was the mother of four children. On the second or third day she complained of severe pain in each axilla and said that she had the same abscess that she had had in previous confinements. As she was having no fever I thought it would be well to make a thorough examination. I found under the right and left axillas three secreting mammary glands and from each of these I was able to obtain milk. There was no apparent nipple on any of the six glands excepting a minute indentation. The milk, however, flowed very freely from all six of them on pressure. I used the old method of massage with camphorated oil and in about two or three weeks the glands lost their fulness and ceased to cause any trouble. Of course, this represents eight mammary glands, three under each axilla and two in their normal position. I would like very much to know if any other case of this kind has been reported.

[COMMENT.—Several reports of similar cases have been published in THE JOURNAL, for example, March 16, 1912, p. 747 (by Dr. J. D. Cantwell), and May 11, 1912, p. 1443 (by Dr. Frank J. Hirschboeck).—ED.]

535 South Pasadena Avenue.

Therapeutics

HEMATURIA

Hematuria means hemorrhage from urethra, bladder, ureter or kidney. It is to be distinguished from urinary conditions due to the presence of blood-pigments in the urine, such as hemoglobinuria, including methemoglobinuria and hematoporphyrinuria. This last condition is of slight clinical significance. Traces of the iron-free blood-pigment, hematoporphyrin, are found in normal

urine, and much larger quantities after the use of trional and sulphonal. The presence of hemoglobin or its oxidation product, methemoglobin, is an indication that hemolysis or laking of the blood has occurred to such a degree that the liver is unable to transform all of the hemoglobin into bile-pigments. This hemolysis or dissolving out of the hemoglobin from the red cells into the fluid medium around them may take place in the circulating blood as a result of the toxic action of some hemolytic agent such as carbon monoxid, potassium chlorate, phenol, and also of the specific toxins of certain acute fevers such as typhoid. yellow fever, malaria and scarlatina. The dissolved blood-pigment then appears in the urine, constituting true hemoglobinuria. Again the hemolysis may take place after the production of the urine in the kidneys. This condition is thus secondary to and dependent on the presence of red blood-cells in the urine. By virtue of the lower osmotic tension of the watery medium of the urine, the hemoglobin is dissolved out of the red cells. This occurs to some extent whenever the urine contains red cells and does not constitute a true hemoglobinuria.

In true hematuria red blood-cells appear in the urine and can always be recognized by the microscope. Depending on their number, the color varies from the normal amber, through dusky and smoky shades, to a bright scarlet if the hemorrhage is severe. Blood in the urine is always accompanied by albuminuria as well as by hemoglobinuria and for similar reasons. A relatively minute quantity of blood will color the urine appreciably. It is occasionally necessary to determine the presence of hemoglobin in urine by chemical methods, but ordinarily the microscopic findings with reference to red blood-corpuscles are sufficient. When the urine is not contaminated with menstrual fluid, hematuria is invariably pathologic, in spite of the fact that small amounts of blood do not alter the gross appearance.

The presence of hematuria being established, the indications are, (1) to relieve the immediate hemorrhage if urgent, (2) to determine the source and cause of bleeding, and (3) to relieve the underlying or essential cause.

1. If the severity of the bleeding demands prompt treatment, the patient should be put to bed, with the hips somewhat elevated on a pillow. A sedative (e. g., morphin gr. ¼, .015 gm., with atropin gr. 1/150, .0004 gm.) is often desirable to prevent restlessness. With a soft rubber catheter, a 1 to 5,000 solution of epinephrin in normal saline solution thrown into the bladder. Normal saline can be made by dissolving one teaspoonful of table salt in one pint of sterile water. If blood drips from the urethra, indicating a urethral origin, the same solution may be used as a urethral injection by means of a syringe. If necessary also, a cold metallic catheter may be introduced to control a urethral hemorrhage by pressure.

2. The source of bleeding must be definitely located, if possible, and its cause determined. Renal hemorrhage is characterized by intimate mixture of blood and urine, and the individual cells are usually decolorized. If from the ureter or renal pelvis, coagula of a corresponding shape may be seen. Blood-casts are the only sure sign of a renal origin. The ordinary causes of a renal hemorrhage are calculus, acute congestion, nephritis, malignant growths and renal tuberculosis. It is to be remembered in this regard that congestion and acute nephritis accompany many of the acute fevers such as scarlatina, diphtheria and typhoid. In chronic nephritis the number of red cells is a rough guide to the severity of the disease. Toxic agents such as turpentine and phenol will also induce severe congestion and inflammation. In tuberculosis and malignant disease, the cystoscope and ureteral catheter should be employed to determine which kidney is affected. Especially in malignant disease, bleeding is prone to begin suddenly with no assignable cause, to be uninfluenced by treatment, and may cease as suddenly as it began. It usually occurs early, and is the only reliable symptom. Exploratory examination of the kidney is justifiable, if all other means of diagnosis have failed. Many times an *x*-ray picture will clear up the condition, especially if there is a calculus. Nephrectomy is of course necessary if tuberculosis or malignant disease of the kidney is diagnosed and the other kidney is found healthy.

Rarer causes for renal hemorrhage are trauma, movable kidney, constitutional disorders, as scurvy and purpura, certain parasites, as the distoma, filaria and echinococcus, renal infarction, as in ulcerative endocarditis, and the idiopathic so-called "renal epistaxis" which is practically an angioneurotic hematuria.

Vesical hemorrhage has few characteristic features. Large or irregular-shaped clots may form. There is a slight bleeding in cystitis from the rupture of congested capillaries, the urine showing the characteristic picture of cystitis. Vesical calculus gives an intermittent hematuria and the determination of the stone accounts for the bleeding. Vesical ulceration, cancer, trauma, new growths and parasites must be considered, and excluded by the urinary picture, by the cystoscope and by concomitant symptoms.

Urethral hemorrhage is most marked at the beginning of urination, and blood generally drips from the meatus. The more common causes are gonorrhea, impacted calculus and instrumentation. A gush of pure blood following urination is a characteristic sign of inflammation of the posterior urethra. Frequently hematuria occurs in tuberculosis and congestion of the prostate. Here bleeding is intermittent, comes at the end of urination, and is not due to urethral ulceration but to prostatic congestion.

3. Having relieved the immediate hemorrhage, and diagnosed the source and cause of the bleeding, it remains to institute treatment designed to cure or alleviate the cause. This treatment must be directed toward the particular condition present in a given case, as has been indicated. In that group of cases in which hematuria depends on acute congestion or inflammation of the kidneys, the indication is to promote vicarious elimination, through the bowels and skin, and to decrease so far as possible the production of toxins in the body. In those cases in which local disease is suspected, as cancer or tuberculosis, the skilled use of cystoscope and ureteral catheter is required for diagnosis, and surgical relief is necessary. The administration of hexamethylenamin in 5-grain (0.30) doses three times a day may act as a valuable prophylactic against vesical or renal infection, but it should be remembered that hematuria has been caused by large doses of hexamethylenamin.

Hematuria is in no wise a disease entity, but only a symptom. Its importance lies either in the actual loss of blood, or more commonly, in its significance as showing the nature and location of a disease-process somewhere in the urogenital tract. The latter consideration is always present, and the physician must never rest until the cause for a hematuria has been accurately determined.

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[For other information see second page following reading matter]

SATURDAY, JULY 27, 1912

ACID-FORMING AND BASE-FORMING FOODS

The balance of acids and bases in the body is a matter of no small concern for the maintenance of healthy physiologic equilibrium. The nicety of the adjustment which normally prevails in this respect is brought to light whenever a pathologic upset enters into the usual routine of metabolism. When, for example, a condition of acidosis is brought about by the abnormal production of such products as diacetic acid, beta-oxybutyric acid or lactic acid, the organism makes a strenuous effort to eliminate the toxic acids after neutralization with fixed alkalies, alkali earths or ammonia. The therapeutic administration of alkali salts such as sodium bicarbonate or sodium citrate is, of course, based on the desirability of averting undue loss of basic tissue constituents for the purposes of such neutralization. The tendency toward an equilibrium of reaction constitutes a fundamental property of the animal organism.

Obvious though these facts are to the average practitioner, it is rarely realized that, on a smaller scale, this same type of adjustment between acid-forming and base-forming elements is going on constantly in the body. The substances that we eat contain the so-called "ash constituents," which are now recognized to have an importance for nutrition quite as prominent in many respects as that of proteins, fats and carbohydrates. Certain foods contain a surplus of base-forming elements, like calcium and magnesium, so that they yield a strongly alkaline ash on burning; whereas other foods lose acid-forming elements like sulphur and phosphorus in ashing and show that acid-forming elements must have predominated in the food. The sulphur and phosphorus of the proteins yield sulphuric and phosphoric acids in their oxidative destruction in the living organism just as readily as they do in the chemist's crucible. The composition of the urine represents the equilibrium between the acidic and basic end-products of metabolism, in which, ordinarily there is a slight preponderance in favor of the acids — hence the normally acid reaction of the kidney secretion.

How are the acid-forming and base-forming elements distributed among the ordinary food substances? Professor Sherman of Columbia University has devoted considerable attention to this question. From the elaborate compilations and analyses made by him and his pupils[1] it appears that meats and fish show a decided excess of acid-forming elements. These likewise predominate in eggs, though to a somewhat less degree than in lean meats. Grain products show a smaller preponderance. Milk shows a slight predominance of bases, which is much greater in vegetables and fruits. The latter fact may surprise those misguided individuals who forbid "acid" fruits to their patients in the belief that these foods actually contribute fixed acid to the organism. As a matter of fact, the acids of fruits and vegetables are essentially organic in nature, like citric and malic acids — compounds which are burned up in the organism and in no degree contribute to the establishment of acid conditions. Citrate of sodium, for example, behaves in metabolism essentially as does the carbonate of sodium in equivalent amounts, i. e., it functions as an alkali.

How real is the rôle of the acid-forming and base-forming elements in metabolism is at once brought out by dietary experiments. When potatoes, in which the base-forming elements predominate, are replaced in the diet by an amount of rice of equal energy value, the acidity and likewise the output of ammonia in the urine at once increases. The shifting of equivalent amounts of these two common vegetable foods is sufficient to produce a readjustment in the urinary equilibrium.

Studies in this field are still in their early beginnings. The inorganic constituents of the diet have started to take on new importance and command some attention in practical dietetics. It is becoming clear that the elements must not only be supplied in adequate amounts, but also stand in appropriate quantitative relations to each other. It is not too much to expect that when these are better understood such annoying pathologic situations as arise in phosphaturia, for example, will readily yield to a rational readjustment of the dietary along the lines here laid down.

THE STEADY ADVANCE OF THE PLAGUE

Within a short time the plague has made its appearance in several West India islands closely connected with this country by commercial and political ties. Trinidad, Porto Rico and Cuba have all suffered invasion, and experience elsewhere does not promise a speedy eradication of the disease under such conditions as prevail in these islands.

It is a time to face the situation soberly but with a full appreciation of what the future may have in store for us. Our ports on the Gulf and the Atlantic coasts generally are to a considerable degree rat-infested. If plague-infected rodents have been introduced into any of these coast cities it will be a difficult—some would say an insuperable—task to prevent the gradual extension of

1. Sherman and Gettler: The Balance of Acid-Forming and Base-Forming Elements in Foods and Its Relation to Ammonia Metabolism, Jour. Biol. Chem., 1912, xi, 323.

the disease in this country. Invasion threatens elsewhere. In spite of the great energy and skill with which the campaign for the destruction of ground-squirrels has been prosecuted on the Pacific Coast, infected squirrels are still being found in numbers far from negligible. During the week ending June 1, 1912, according to the reports of the Public Health Service, positive diagnosis was made of sixteen plague-infected ground-squirrels found in Alameda and Contra Costa counties, California. The opening of the Panama Canal will unquestionably increase the danger that the disease may be introduced at other points. The possibility that infection may be brought in over the Mexican border can likewise not be overlooked.

The immediate danger of plague introduction is clearly and forcibly set forth in detail in King's article appearing in this issue.[1] Few will dissent from the conclusion there expressed that immediate, decisive and concerted action by national, state and local authorities should be taken. Even if one is not sanguine as to ultimate success, it is not soldierly to confess to defeat before the event. One thing is certain, that if the plague does get a real foothold, the cities that are overrun with rats and are in a general unclean condition are likely to suffer most severely.

It must be remembered that one of the most baffling peculiarities of the plague is its often slow, insidious, almost unnoticed extension. After being "endemic" for a time among rats, it may suddenly, and for some unknown reason, become more readily communicable to man. Like a forest fire that smolders in the peat and flares up from time to time even after heavy rains and apparent extinction, the plague is difficult to stamp out. Epidemiologists are unable to explain the entire absence of the plague from Europe during all the early part of the nineteenth century and its unparalleled world-wide extension in the last two decades. Whatever the cause for the singular rise and fall of this disease, it is significant that the same creeping slow advance now observed has apparently preceded all the previous great outbreaks of the Black Death. Modern conditions of life are very different from medieval conditions, but many sanitarians are wondering anxiously how far our modern knowledge of disease and our methods of warfare against it will avail in combating the spread of a disease so peculiarly difficult of control.

We do not wish to appear as alarmists, but we feel it desirable to recognize the situation as one of great gravity, meriting the earnest attention of national and state health officials. The general public should be made definitely aware of the peril and should be urged to cooperate in the difficult, costly and tedious, but absolutely necessary, measures of prevention. Thorough measures may prevent the plague from getting a foothold in the United States, and those responsible should at once take up the necessary work.[2]

1. King, Howard D.: Plague, the Menace of the United States of America, p. 237.
2. See also General News, this issue.

RAT EXTERMINATION A PUBLIC DUTY

In addition to the article referred to in the preceding editorial, we publish in this issue one by Rucker[1] on the necessity for rodent extermination in seaports. This paper was prepared for and read at the Atlantic City meeting of the Association. Many of the statements in this paper have already been proved prophetic by the outbreaks of plague in Porto Rico and Cuba which have occurred since it was written; for instance, the statement that it is a "well-known fact that plague may smolder in a rodent community for a considerable time before accident brings about a closer contact between infected animals and man, thus giving rise to an epidemic." This is plainly what has occurred in Porto Rico and Cuba. Rucker asks: "Who can doubt that if the rats of the great seaports of the world were examined, the infection would be found in many cities hitherto considered plague-free?" Had thorough and systematic trapping and examination of the rats along the harbor front of San Juan been made there can be little doubt that the infection would have been detected sooner and much of the already considerable morbidity and mortality among human beings and the serious interruption to commerce been avoided.

Plague is already known to be present among human beings in some of the ports of South America[2] and the West Indies; there is every reason to believe that it is present but unrecognized in the rodent population in many other of these cities. Under the circumstances it is folly to suppose that the rats (and ultimately the human beings) of our seaports will long remain free from the disease; in fact, no one conversant with the situation would be surprised to hear of cases developing in some of them at any time. Yet but little more than a month ago when Rucker read his paper he had to admit that aside from the extensive work which has been carried on in California, no effort of any magnitude has been made in America to check the inroads of rats or to determine whether or not they are infected with plague — work of the utmost importance, for the fewer the rodents, the less would be the likelihood of the infection gaining an entrance or of spreading.

The plague situation in the West Indies has within the last few weeks stimulated some of the larger seaports to undertake a systematic destruction of rats, but a much more extensive campaign should be undertaken if the country is to be thoroughly protected against this, one of the most insidious of diseases and one of the most difficult to control.

Rucker outlines the salient features of such a campaign. The haphazard trapping and poisoning of rats are of but secondary importance; the young are born in such numbers that the removal of a few simply enables others to survive. The essential things are to destroy the nesting places ("to build the rat out of existence")

1. Rucker, W. C.: The Necessity for Rodent Extermination in American Seaports, p. 243.
2. THE JOURNAL A. M. A., July 6, 1912, p. 43.

and to render their access to food impossible; "the famished rat does not linger." But while Rucker makes it evident that much of this work should ultimately be done by the individual householder it is equally evident that the latter needs the advice, assistance and leadership of the local health officers, and in many cases appeal will have to be made to the law to compel the individual to take precautions necessary to protect the public. Only a few of the local health officers of the country have had any experience in work of this character; they will need the assistance and leadership of the federal authorities. The latter, fortunately, are qualified to a remarkable degree to become the leaders of such a movement. Not only has the present Surgeon-General of the Public Health Service had years of intensely practical experience in such work, but he has a number of assistants who are similarly qualified by work at home and abroad to direct campaigns of this character.

The services of these men should be available to state and city health officers for the organization and inauguration of antirat campaigns; the Hygienic Laboratory should offer courses to such officials on the laboratory diagnosis of plague; officers of the service should be available for public lectures on the subject. Even the most ardent advocate of local government would admit that the federal government should do at least this much, for as Rucker points out, "plague is essentially a disease of commerce" and no power is better secured to the federal government than the control of interstate commerce.

Will Congress make it possible for the Public Health Service to do the federal government's share in this work? We believe it will, although recent events are not altogether encouraging. Thus the House Committee on Appropriations recently reduced the contingent appropriation for the prevention and suppression of epidemics from $500,000 to $100,000, the chairman stating that the latter sum (although as a matter of fact inadequate to meet even a small epidemic) would probably suffice until Congress met again — a statement which prompted ex-Speaker Cannon to make the homely but prophetic remark that epidemics "care no more for the coming and going of Congress than does a duck for a June bug." It is inconceivable that the House (controlled as it is by a party pledged by its platform[3] to promote the efficiency of the public health service) will not immediately remedy this and restore the epidemic fund to at least its present figure.

The sooner the country recognizes that it is face to face with a most serious problem, the better it will be for the health and lives of the people and also for commerce. Loud protests are heard against any decrease in the efficiency and preparedness of the army and navy, although the danger of war seems very remote; much louder protests should be heard against our present lack of full preparedness to meet an enemy at our very gates.

3. The Journal A. M. A., July 13, 1912, p. 126.

MEMBERSHIP IN THE AMERICAN MEDICAL ASSOCIATION

Dr. J. B. Murphy, the retiring President, in his address to the House of Delegates at the recent Atlantic City session of the American Medical Association, commented on the apparently small increase of membership of the Association during the last two or three years. This comment was unfortunate, in that it misinterpreted the actual facts and conditions, and gave to a certain class of medical journals apparently good reasons for pessimistic criticisms. As might have been predicted, the opportunity has not been neglected. Much more important, however, is the fact that true friends of the Association—who may not have grasped fully the explanations published in the Association's official reports—have been prompted by President Murphy's address to ask why there has been a slow increase in the Association membership — in one year an actual loss — during the last three years. On the surface it does look as though there was a reason for anxiety; actually, however, there are good reasons for congratulations. Let us look at the facts.

Following is a tabular statement of the members and subscribers, taken from the Trustees' report[1] of 1912: (The figures do not include copies sent to libraries, exchanges and advertisers, sample copies, etc.)

Date.	Members.	Subscribers.
Jan. 1, 1900	8,445	4,633
Jan. 1, 1901	9,841	8,339
Jan. 1, 1902	11,107	10,795
Jan. 1, 1903	12,553	12,378
Jan. 1, 1904	13,899	14,674
Jan. 1, 1905	17,570	15,698
Jan. 1, 1906	20,826	17,669
Jan. 1, 1907	26,255	20,166
Jan. 1, 1908	29,382	20,880
Jan. 1, 1909	31,999	18,983
Jan. 1, 1910	33,032	19,832
Jan. 1, 1911	33,540	20,504
Jan. 1, 1912	33,250	21,620

The table given above shows a loss in the membership columns of 290[2] in 1912, while a gain of 1,116 is noted in the subscription column. What is the explanation of the loss in members? From the report[3] of the Secretary to the Los Angeles meeting we quote:

> The membership of the American Medical Association on May 1, 1911, was 33,960, a net loss for the year of 216. This would be discouraging without explanation. In their reports the Trustees have frequently referred to the fact that membership was being recruited almost entirely from those who at first were listed as subscribers. In other words, until the last year, continued efforts were made to get those who were taking The Journal as subscribers and who were eligible to membership in the American Medical Association, to have their names transferred to the membership rolls. For the past year, however, we have relaxed our efforts in this direction on account of the uncertainty of the final ruling of the Post-Office Department regarding the mailing of The Journal to members as such.

Few of our readers are aware of the desperate efforts that have been made by the enemies of the Association

1. The Journal A. M. A., June 8, 1912, p. 1787.
2. The difference between the figures of the Trustees' report and that of the Secretary is explained by the fact that the former is of Jan. 1, 1912, while the latter is of May 1, 1911. Further, the Secretary's list includes *ex officio* members.
3. The Journal A. M. A. July 1, 1911, p. 57.

during recent years to have THE JOURNAL debarred from the second-class postal rates, on the alleged ground that members receive it "free." It is unnecessary to go into this matter here. Suffice it to say that for the two years preceding last March the situation was decidedly serious, and for a time it looked as though the present arrangements regarding membership and THE JOURNAL would have to be abrogated. The consequence was that during this period little effort was made to increase membership at the expense of the subscription list.

Happily, last March the post-office matter was satisfactorily arranged, and the former method of encouraging the transfer has been resumed. During the present year we may expect an increase of from 3,000 to 4,000 on the membership list. Of the 21,000 subscribers at present on the list, probably a third are eligible to membership in the American Medical Association.[4]

The important facts are: The great majority—we estimate approximately 80 per cent.—of the members of the American Medical Association were originally subscribers to THE JOURNAL. The membership has been increased by building up the subscription list and then by placing on the membership list those who were eligible and wished to be transferred. A reading of the reports of the Board of Trustees will show that during the last five years over 15,000 subscribers have been transferred to the membership list.

There has been another cause for a falling off in our mailing list, but this affected both subscribers and members, and not only our journal, but also all periodicals. Until two years ago it was the custom to carry delinquents on the mailing list for two or more years. In March, 1911, a post-office ruling went into effect that periodicals which allowed their subscribers to be more than one year in arrears would not be carried at second-class rates. This ruling compelled us to drop over 5,000 names. Many of these have since been restored.

Thus, instead of being pessimistic, the friends of the Association should feel encouraged. To-day the Association is stronger than it has ever been before; its membership roll is larger and now rapidly growing; its prospects for usefulness to the public and to the medical profession are greater. It is accomplishing, for both the public and the profession, more than the most enthusiastic would have dreamed possible ten years ago, and its activities in promoting better things are steadily increasing and broadening.

THE EFFECTS OF SUMMER HEAT ON INFANTS AND OLDER CHILDREN

A series of extremely interesting observations have been made by Schlesinger[1] on the effects of summer heat on infants and older children in some of the various districts in Germany, more particularly in Strasburg. The abnormally high mortality among infants during an extraordinarily hot summer occasioned the study.

On comparison of various districts, all having the same climatic conditions, the milk-supply and general care of infants being also practically identical, Schlesinger found that in one district the mortality was higher than in the others. In this district the houses were tightly packed, with but little open space between. In such places the air does not cool off at night during the summer, the temperature in one place remaining practically constantly above 30 C. During the winter the child is often subjected, during the day when washing and cooking are going on, to a similar high temperature, but at night cooling takes place. In the summer there is heat stagnation. In addition, because of similar activities during the summer, a relatively higher humidity exists, making it still more difficult for cooling to take place. In the other districts considered, the heat was intermittent, as open spaces allowed circulation of air.

During the course of this study, Schlesinger noted in infants a heat prostration similar to that in adults, occurring most commonly in well nourished children, fed on prepared foods or condensed milk, and kept covered or wrapped up, the temperature about them being high and constant. Although these heat strokes occurred but seldom, there were other and more constant evidences of the effects of summer heat in the form of lowering of the general vitality and resistance, making the children more subject to infection; practical cessation of growth in bottle-fed children; increase of the severity of gastro-intestinal diseases, and marked exacerbations of skin diseases.

A study of the effects of heat on 260 school children, between the ages of 6 and 10, was made, and it was found that 30 per cent. lost appreciably in weight from May to August; in 5 per cent. this loss was extreme. Males lost more than females, the older children less than the younger, and the better nourished less than the weaker, or those who could least afford it. By comparison with previous statistics, it was determined that the cause of this was undoubtedly the heat stagnation during an extremely warm season, the children being confined in warm schoolrooms, with a high humidity over long periods during the day. In these children the effects were apparent in restlessness, lassitude, headache, nose-bleed and similar symptoms. With shorter hours, and a vacation extending over seven weeks, the heat remaining the same, all the children regained their previous weight and most of them added to their former weight.

The treatment and care of infants during the summer should not be confined to the ordinary medication of definite diseases, but should be directed especially toward offsetting the effects of the heat. Less concentrated food should be given than in cool weather, and in smaller quantities; plenty of water, however, is desirable. Children should wear little and loose clothing, and frequent cool and tepid baths should be given. Heat stagnation should be avoided so far as possible.

4. See Association News, this issue.
1. Schlesinger: Deutsch. med. Wchnschr., 1912, xxxviii, 558.

Current Comment

INSTINCTIVE FACTORS IN CUSTOMS OF DIET AND FOOD PREPARATION

It is a curious and almost inexplicable fact that there are certain dietetic customs, without any historic association but frequently with an underlying common physiologic significance, which have been practiced in common for years by untutored people at various places on the earth. This is true, for example, of the use of tea, coffee and the cacao products, which originated in the most diverse geographic regions, yet is undoubtedly based on an identical physiologic effect probably associated with the methylated purins, notably caffein, which they all contain. Thus instinctively in widely separated countries individuals unrelated by common racial bonds have sought precisely the same stimulants hidden, in the different cases, in plants of widely different botanic characteristics. A somewhat similar story might be told of the unconnected ways in which alcoholic beverages have found ready manufacture in diverse countries and a wide-spread use among peoples who have never experienced any intercommunication which might lead to the introduction of common habits of living. A most interesting instance of the instinctive solution of a chemical problem and the satisfaction of a dietetic need is found in the naive use of "male" and "female" salt by certain tribes in the interior of Africa. Several hundred miles up the Atbara River salt is extracted, by leaching with water and boiling down in the usual way, from earths which contain only a little over 2 per cent. The natives employ for this purpose two different earths, one of which contains what they term the "male" and the other the "female" salt. They believe that neither of these is edible alone, but that if the earths are mixed a good quality of salt is furnished. Analyses made some years ago in the Wellcome Research Laboratories at Khartoum bore out these statements. The "male" salt contains such a large proportion of sodium sulphate as would render it of little use as table salt. Similarly the "female" salt contains an excessive proportion of calcium chlorid. The "male" and "female" earths, when combined, unite to form calcium sulphate which precipitates on evaporation, leaving the common salt, sodium chlorid, in the mother liquor. The outcome is ideal from the standpoint of dietetics. How are such unique practices initiated in regions where a knowledge of both chemistry and physiology is as unknown as the *x*-ray was to our ancestors?

WHAT IS AN ENZYME?

There are few persons who have the facility of expressing a somewhat abstract scientific conception in terms of an analogy that strikes home at once. Emil Fischer furnished an admirable illustration of what we have in mind when he elucidated, by a now famous phrase, the specificity of enzymes, that is, the capacity of digestive ferments to attack one substance and not another which may even be closely related. Enzyme and substrate, according to Fischer, bear a relation to one another like that of a key to its lock. Not all keys will open all locks. The configuration of the two factors must be appropriate. Decidedly forceful and unquestionably unique is the description of the distinctive peculiarity of enzymes lately published by the London physiologist, Professor Halliburton,[1] in a primer intended for the general reader. "We may roughly compare an enzyme," he writes, "to an ill-disposed person who comes into a room full of good-natured people, and who succeeds in setting them all by the ears. He has produced a change in them without undergoing any change himself, by his mere presence. He is, moreover, able to repeat the process over and over again in fresh roomfuls *ad infinitum*." Perhaps the expression "enzyme" will now acquire a wider usefulness as a descriptive term for a not entirely unknown type of human being.

THE POINT OF VIEW

In a nostrum advertisement recently printed in a daily newspaper, three endorsements from "doctors" were prefaced with this engagingly ingenuous statement:

> When a doctor endorses a preparation it means more than an ordinary testimonial. His opinion is always that of the professional man devoted to the welfare of the people.

Strange what a difference it makes in a nostrum-promoter's attitude whether doctors are endorsing or condemning his stuff! When a doctor endorses it, then "his opinion is that of the professional man devoted to the welfare of the people." But when the doctor condemns the dope or advocates any measure that will compel honesty in business, then he is "trampling on the liberties of the people," and seeking to form a "medical trust"!

RABIES IN 1911

In 1909 the Public Health and Marine-Hospital Service instituted an investigation as to the incidence of rabies in the United States during the year 1908. All possible sources of information were utilized and complete verification of the cases was attempted in every instance. A comparison with the figures obtained in 1911[2] would seem to indicate that the infection is on the increase. In 1911, cases were reported from 1,381 localities as against 534 in 1908, while there were only ninety-eight deaths in 1911, notwithstanding the largely increased number of localities from which the disease was reported, as compared with 111 deaths in 1908. This is accounted for probably by the large increase in the number of institutions in which the antirabic treatment could be obtained and by the fact that the victims availed themselves more largely of this treatment. In 1908 there were twenty-three institutions in the country where this treatment was administered; in 1911 there were at least forty-two. In addition there are a number of laboratories which supply material for inoculations to practicing physicians. The number of persons known to have taken the treatment in 1908 was about 1,500, while in 1911 it was 4,625. The figures for 1911 show that the period of incubation in nineteen out of sixty-five cases was between twenty-one and thirty days, this

1. Halliburton, W. D.: Physiology, Dent's Scientific Primers, London, 1911.
2. Pub. Health Rep., July 12, 1912.

being the greatest number for any given incubation period. Three cases occurred over twelve months after the injury. The average incubation period of all cases, excluding those over one year, was 49.25 days. The decrease in the number of deaths in 1911 as compared with 1908 amounted to nearly 12 per cent. Striking facts brought out in this report are the wider distribution of the infection, its spread on the Pacific coast, which section in 1908 seemed to be entirely free from the disease, and the decreased death-rate owing to better facilities for treatment and better distribution of the antirabic virus. The situation calls for still greater efforts toward the complete eradication of this preventable disease.

Medical News

IDAHO

State Association Meeting.—The Idaho State Medical Association met in Portland, Ore., together with the state associations of Washington and Oregon, July 5-6. Dr. J. W. Gue, Caldwell, was elected president; Dr. F. W. Mitchell, Blackfoot, vice-president, and Dr. E. E. Maxey, Boise, secretary-treasurer (reelected). The next meeting will be held in Twin Falls.

ILLINOIS

School Physicians for Peoria.—The school board of Peoria has decided to employ seventeen physicians as school inspectors thus providing for one inspection a week of each school child.

Dunning Now State Hospital.—Cook County Institutions, Dunning, for many years the county poor farm and insane hospital, on its transfer to the state of Illinois became the Chicago State Hospital.

Hospital for Peru.—At a meeting of the Peru Hospital Association, July 10, plans were presented for the new hospital, which is to be four stories in height and is to cost between $60,000 and $75,000, of which $26,000 has already been contributed.

Personal.—Dr. Charles D. Thomas, Peoria, has been elected first vice-president of the Central Illinois Association of Country Clubs.——Dr. J. S. Watson, Aurora, has been bequeathed one thousand dollars by the will of the late Mrs. May Valentine.——Dr. William Hartford, Urbana, fractured his right arm in two places and dislocated his right shoulder while cranking his automobile, near Chebanse, recently.——Dr. and Mrs. Byron C. Stolp, Wilmette, have sailed for Europe.

Chicago

Personal.—Drs. Frank Billings, Arthur D. Bevan and M. L. Harris returned from Europe, July 20.——Dr. S. R. Pietrowicz, formerly superintendent of the Cook County Institutions, Dunning, was presented with a gold watch and charm by employees of the institution.——Dr. and Mrs. Louis Bernheim sailed for Europe, July 13.——Dr. Julia Anna Norris has been elected head of the department of health and physical training for women in the University of Minnesota.——Dr. Antonio Lagorio has been reappointed a member of the Public Library Board.

INDIANA

Free Treatment of Rabies.—The free treatment for the prevention of hydrophobia under the new state law has already been given to fifty-six individuals, fifty of whom had been bitten by rabid dogs and three each by rabid cats and horses.

State Board to Inspect Summer Resorts.—The State Board of Health has made arrangements to inspect the summer resorts of northern Indiana with regard to general cleanliness, sewage and garbage disposal, water supply, the presence of flies, mosquitos, bed bugs and rats and the quality and handling of the food supply.

Undergraduates Must Not Practice.—The State Board of Medical Registration and Examination has adopted the resolution instructing the secretary to proceed against undergraduate students who are practicing medicine without a license and not under direct supervision of a licensed physician. The attorney-general has rendered an opinion to the board in which he held that a student practicing in a branch office, without the licensed physician at hand to direct or supervise the practice, is not complying with the law. (Fox)

Personal.—Drs. G. F. Holland, Bloomington, and N. Austin Carry, Silverlake, have been commissioned first lieutenants M. C., Ind. N. G.——Dr. Richard Poole has succeeded Dr. George M. Hays, resigned, as assistant police surgeon of Indianapolis.——Dr. J. P. Simonds, superintendent of the state bacteriologic and pathologic laboratory, has resigned and will become a member of the faculty of the University of Texas. Dr. William Shimer has been appointed his successor.——Dr. John W. Sluss has been appointed superintendent of the Indianapolis City Hospital, vice Dr. John L. Freeland, retired.——Dr. H. A. Duemling has succeeded Dr. A. P. Buchman as president of the Fort Wayne Board of Health.——Dr. I. M. Myers, Maples, is said to be recovering from a cerebral hemorrhage, sustained while visiting his sister in Akron.——Dr. A. R. Tucker, Noblesville, suffered a cerebral hemorrhage in Chicago, June 22.

MARYLAND

Hospital Wing Opened.—The new wing of the Maryland Hospital for the Insane (Spring Grove), near Catonsville, was opened for patients July 19. The building is intended for women, and sixty patients from Bay View Hospital, the Baltimore Almshouse, have been transferred to it.

Baltimore

Milk Standard Adopted.—A bacteriologic standard for milk has been adopted by the health department. Hereafter no milk must show more than 5,000 bacteria to the cubic centimeter and pasteurized milk must not contain more than 500 bacteria to the cubic centimeter. Dairymen whose milk does not come up to the standard will be published.

Memorial for Pioneer Dental College Man.—A movement has been started in Baltimore to erect a suitable memorial at a cost of $25,000 to the great dentist, Dr. Chapin A. Harris, who, with Dr. Horace A. Hayden founded the first dental college in the world, the Baltimore College of Dental Surgery. Dr. Harris is said to have been a most original genius. It is to his credit that he did not found the dental school until he had tried to engraft his project on several medical schools, and had been rebuffed. Dr. T. A. Heatwole, dean of the Department of Dentistry of the University of Maryland is in charge of the memorial project. It is proposed to erect a statue to Dr. Harris in one of the public squares of the Monumental City.

Personal.—Dr. Charles F. Bevan, for ten years dean of the College of Physicians and Surgeons, has resigned and has been succeeded by Dr. William F. Lockwood, professor of medicine in the same institution.——Dr. Robert A. Warner has resigned as superintendent of the Sydenham Hospital for Infectious Diseases, and will be succeeded by Dr. Josephus A. Wright, who will assume charge August 1.——Dr. Thomas L. Richardson, quarantine physician, rescued several persons who were in danger of drowning in a storm, off Quarantine, July 13.——Drs. Ernest H. Gaither and Adolf Meyer have returned from Europe.——The honorary degree of Doctor of Science was conferred on Dr. J. Whitridge Williams at the two-hundred and fiftieth anniversary of Dublin University.——Dr. George B. Reynolds, who was seriously injured by footpads in June has recovered and resumed practice.——Dr. Robert Lee Randolph and daughter are taking a trip to the Canal Zone.——Dr. Pearce Keintzing sailed for Europe, July 20.

MICHIGAN

New Officers.—Grand Rapids Academy of Medicine: president, A. J. Baker; secretary, H. W. Dingham.——Alumni Association of the Detroit College of Medicine: president, Dr. Burt R. Shurly; secretary-treasurer, Dr. R. L. Clark, both of Detroit.——Wayne County Medical Society: president, Dr. Ernest W. Haass; secretary-treasurer, Dr. R. L. Clark, both of Detroit.

Tuberculosis News.—More than $11,000 has already been turned in as the receipts of the Tuberculosis Blue Star Tag Day, Detroit, although less than one-half of the boxes sent out have been returned.——The Board of Supervisors of Houghton County has appropriated $2,000 to be expended under the supervision of the hospital committee of the Houghton County Anti-Tuberculosis Society.

Water Supply of Detroit.—The bacteriologist of the State Board of Health has reported the result of the examination of a sample of water collected from the Detroit City Pumping Station, July 2. The sample contained one colon bacillus in 7.5

cubic centimeters of the water. He states that practical isolation of the *Bacillus typhosus* from a water which will cause typhoid is impossible. The question of sewage in the Detroit city water is not as to its presence, but whether the sewage has undergone sufficient bacteriologic purification to be regarded as safe when it reaches the intake. Typhoid fever is not the only or the most important consideration in dealing with contaminated drinking water. As Hazen's theory states, "where one death from typhoid fever has been avoided by the use of better water, a certain number of deaths, probably two or three, from other causes have been avoided."

NEW JERSEY

Typhoid at Woodbury.—Because of an outbreak of typhoid fever, the Woodbury Board of Health issued an order July 9, to all residents to boil all water and milk used for drinking purposes, and an inspector with assistants from the State Board of Health will inspect the water system and dairies of Woodbury.

Personal.—Dr. H. E. Shaw, Long Branch, a member of the Monmouth Memorial Hospital staff, was seriously injured at Long Branch, July 4, by the explosion of a cannon cracker. ——A reception and dinner were given Dr. Norton L. Wilson, Elizabeth, by his colleagues recently in recognition of his election to the presidency of the Medical Society of the State of New Jersey. After dinner a large silver loving-cup was presented to him by Dr. Victor Mravlag, the toastmaster.

NEW YORK

Personal.—Dr. Anthony W. Rusin, Syracuse, was seriously shocked and burned by electricity in his bath room July 8. ——Dr. F. W. Marlow, Syracuse, sailed for Europe, July 24.

Hospital Notes.—Articles of incorporation of the Arnold Gregory Memorial Hospital, Albion, were filed June 22. This institution has been made possible by the gift of property valued at $8,500.——The women of Flushing have raised $9,357.47 more than the $100,000 required for the building of a new Flushing Hospital. The hospital will be built on Parsons Avenue, adjoining the present building.——The Childrens' Pavilion and Open-Air School of Iola Sanatorium, Iola, were formally dedicated, July 4.——The supervisors of Niagara County decided on July 8 to establish a county tuberculosis hospital to cost $40,000.

To Educate Girls in Sex Hygiene.—The State Department of Health has undertaken a state-wide campaign of education among women and girls on the subject of sex hygiene. The work is to be done by means of lectures, circulars and exhibits, and will be carried on in cooperation with other organizations, as the Women's Christian Temperance Union, Association of Women's Clubs, etc. It is proposed to reach girls working in industrial establishments. The New York State Cancer Laboratory will cooperate in the teaching of the means of prevention and necessity for early skilled treatment of cancer. In order to carry on this work the Commissioner of Health has appointed a staff of women, selected from different cities throughout the state, to deliver lectures.

New York City

To and From Europe.—Dr. and Mrs Archibald W. Taves will sail July 31 for a year's residence abroad.——Dr. James Sounet Green has returned after a three-years' stay in Europe.

War on Mosquitoes Begins.—At the suggestion of Dr. Joseph O'Connell, Health Officer of the Port of New York, the Board of Aldermen has appropriated $10,000 for the purpose of fighting mosquitoes in the vicinity of New York City. The work of extermination will be begun on Staten Island and extended to Flatbush and the marshes of Jamaica Bay.

New Pavilion for Montefiore Home.—A private hospital is to be built at a cost of $200,000 by the Montefiore Home for Chronic Invalids. This is a new departure, a private hospital exclusively for the use of chronic patients who can afford to pay for exceptional attention. It is to be situated opposite the new Montefiore Home, which is now being constructed at a cost of $2,000,000.

Cooking Schools for the Public.—The New York Association for Improving the Condition of the Poor will maintain cooking schools on two of the piers during the summer. Special attention will be given to the proper dietary for babies, growing children and adults during the heated season. The East Thirty-Fourth Street and the West Twenty-Third Street piers have been chosen for these demonstrations.

Saved All Their Babies.—The Babies' Welfare Association reports that for the first two weeks in July it has registered 15,000 babies at the ninety milk stations which it conducts in this city and that there has not been a single death among these babies. It is estimated that there are 250,000 babies in the city and during the week ending July 13 there were 307 deaths of babies under the age of one year. This was a rate of 122.9 per thousand as compared with a rate of 149 for the corresponding week of last year.

A College for Oral Surgery.—Contracts have been signed for the building of the College of Dental and Oral Surgery of New York at 302 East Thirty-Fourth Street. There will be opportunities for research work and scientific investigation into the causes and effects of disease of the jaws and teeth. There will be a free clinic in connection with the institution and special attention will be given to school children sent by the board of education. The new institution will be under the care of the regents of the University of the State of New York.

Failure to Report Births.—Health Commissioner Lederle calls attention to the fact that for the first five months of 1912 there were 56,258 births reported as against 56,082 for the corresponding time in 1911. This would indicate a decrease of 1.10 per 1,000 population. It is not believed that there has been any such decline in the birth-rate in view of the fact that 17 deaths of infants whose births were not recorded were reported for the month of May. If, as statistics show, one out of every five infants born dies before the age of three months, it is highly probable that many more than the 17 which have come to notice have been unreported. The Department of Health wishes to make it clear that this state of affairs must not continue and that negligence will be prosecuted to the full extent of the law.

PENNSYLVANIA

Personal.—Dr. William W. Richardson has resigned as chief resident physician of the Hospital for the Insane, Norristown, to take effect September 1. He will open a private sanatorium in Pittsburgh.——Dr. A. R. Allen, Carlisle, had his left ankle dislocated in an automobile accident, recently.——Dr. C. C. Dibert, Bedford, was seriously injured in a sham battle during a Fourth of July celebration, and is under treatment in the Altoona Hospital.——Dr. W. C. McCandless, Butler, who has been seriously ill with septicemia, is reported to be improving.——Dr. J. A. Gormley, Meadow Land, is ill in the Washington State Hospital with septicemia.——Dr. J. K. White, New Brighton, who has been seriously ill is reported to be convalescent.——Dr. Henry R. Douglas, Harrisburg, has been appointed meat and milk inspector.——Dr. J. C. Gable, Freeland, has accepted a position on the staff of the Palmerton State Hospital.

Philadelphia

New Officers.—Philadelphia Laryngological Society, June 25: president, Dr. Ross H. Skillern; secretary-treasurer, Dr. Charles A. O'Reilly.

Rats on Vessels From Cuba to This Port Killed.—The American tank steamship *Courier*, from Matanzas and Havana, Cuba, ports infected with bubonic plague, was held at quarantine station at Marcus Hook, where most rigid examination of the captain and crew was made before the ship was permitted to proceed. The rats were suffocated by sulphur fumes and strict precautions taken.

Steerage Passengers Vaccinated.—To prevent a repetition of the small-pox cases brought to this city by the steamship *Haverford* on her last trip four weeks ago, every one of the 484 steerage passengers, who arrived on this steamer, July 8, was taken off the ship and vaccinated at the United States Marine Hospital, Lewes, Del. Dr. W. G. Stimpson of the Marine-Hospital Service in this city went to the station at Lewes, where he was joined by Surgeon Kearney, from Washington, and took charge of the station.

Court Approves Jewish Hospital Petition.—The growing needs of the Jewish Hospital Association and the fact that the income from funds now in its possession and eventually payable to the institution out of the residuary estates will reach the statutory limit (preventing a charitable corporation in the State of Pennsylvania to hold property, whose income from invested funds and real estate amounts to more than $30,000 per annum) made its board of officers petition the court for an increase of the limit of such income to $250,000 per annum. Judge Bregy in the Court of Common Pleas No. 1 approved this petition June 28.

Personal.—Drs. Charles P. Grayson, Arthur Ames Bliss, Walter J. Freeman, William Zentmayer, H. C. Register, M. B. Hartzell, George Stout and W. W. Woodward, West Chester, have sailed for Europe.——Dr. James Pettigrew, Philadelphia, while experimenting with cartridges, July 3, had his left thigh

badly lacerated by a premature explosion.——Dr. Herbert J. Smith has been elected by the Board of Trustees, clinical professor of dermatology, of the Medico-Chirurgical College, to succeed Dr. J. L. Shoemaker. Dr. Smith is associate professor of materia medica at that college at present.——Dr. William E. Muller has been appointed chief medical examiner of the Civil Service Commission and Dr. J. Clinton Foltz, assistant.

More Baby Saving Shows.—Owing to the good work accomplished by the Philadelphia Baby Saving Show, similar shows are being organized in many cities of the state. Carlisle opened one July 16, and Wilkesbarre July 22, and Erie, Pittsburgh and other cities will follow. Last year 11,009 infants, under two years of age, died in Pennsylvania from cholera infantum, and 80 per cent. of these deaths were during June, July, August, September and October. The State Department of Health will cooperate with any organization in town or village, who will aid in this work of reducing infant mortality.

To Exterminate Mosquitoes.—Councils have appropriated $5,000 towards the extermination of mosquitoes and Drs. Joseph S. Neff, director of Public Health and Charities, and Henry Skinner of the Academy of Natural Sciences and Director Cooke have been planning to drive the insects from the city.

TEXAS

New Society Organized.—Physicians of Brazos County met in Bryan recently and organized the Brazos County Medical Society, electing Dr. George F. Lee, Wellborn, president; Dr. W. B. Cline, Midway, vice-president, and Dr. R. J. Hunnicutt, Bryan, secretary-treasurer.

Tuberculosis Colony Opened.—The State Tuberculosis Sanatorium, Carlsbad, was formally opened July 4 in the presence of more than 5,000 people. A free barbecue was given and the opening address was delivered by Hon. T. H. McGregor, Austin, who introduced the bill for the establishment of the colony in the State Legislature.

Tuberculosis Hospital for Dallas.—The efforts of the civic societies to provide a home for victims of tuberculosis was rewarded, July 12, when the city commission, by unanimous vote, adopted a joint resolution locating a city and county tuberculosis hospital in the present Union Hospital which has been used for communicable diseases.

Building for Physicians.—At a special meeting of the Harris County Medical Society, a plan was discussed for the construction of a six- or eight-story building thoroughly equipped, with an auditorium for the use of the society, a medical library, and special operating and clinical rooms, etc. The rest of the building is to be divided into rooms and suites for physicians and dentists.

VIRGINIA

New Officers.—Shenandoah County Medical Society at Woodstock, June 25: president, Dr. D. D. Carter, Woodstock, (reelected); secretary-treasurer, Dr. W. F. Driver, Woodstock (reelected).

Southwest Virginia Physicians Meet.—The twentieth annual meeting of the Southwest Virginia Medical Society was held in Pulaski, June 27-28 and the following officers were elected: president, Dr. J. T. Graham, Wytheville; vice-presidents, Drs. J. A. Tipton, Hillsville, and J. W. Preston, Roanoke, and secretary-treasurer, Dr. A. B. Griener, Rural Retreat. Roanoke was selected as the next place of meeting.

Personal.—The office of Dr. Martin L. Dalton, Floyd, was destroyed by fire, July 8.——Dr. R. S. Martin, Stuart, has been elected president of the State Board of Medical Examiners, vice Dr. Rawley W. Martin, Lynchburg, deceased.——Drs. George Ben Johnston, Richmond, J. B. Fisher, Midlothian, and Lewis E. Harvie, Danville, have been reappointed members of the State Board of Health.——Dr. Herbert Old, Norfolk, has been elected secretary and treasurer of the State Board of Medical Examiners.——Dr. Joel Crawford, Yale, has been elected councilor for the fourth congressional district, vice Dr. Samuel A. Hinton, deceased.

WASHINGTON

New Officers.—Lincoln County Medical Association at Davenport: president, Dr. R. P. Moore; secretary, Dr. A. D. Snyder (reelected), both of Davenport. Harrington was selected as the permanent meeting place of the association.

New Officers for State Board.—At the annual meeting of the Washington State Board of Medical Examiners, held in Tacoma July 6, the following officers were elected: president, Dr. H. R. Keylor, Walla Walla; vice-president, Dr. A. Macrae Smith, Bellingham; secretary, Dr. F. P. Witter, Spokane and treasurer, Dr. W. T. Thomas, Tacoma. The next session will be held in Spokane, June 7, 1913.

State Association Meeting.—At the annual meeting of the Washington State Medical Association held in Portland, Ore., July 5-6 in connection with the meeting of the Northwest Medical Association, the following officers were elected: president, Dr. C. J. Lynch, North Yakima; vice-presidents, Drs. J. R. Brown, Tacoma, and P. D. McCormick, Spokane, and secretary-treasurer, Dr. C. H. Thomson, Seattle. The next annual meeting will be held in Everett.

WEST VIRGINIA

Personal.—Dr. H. D. Hatfield, Eckman, has been given the Republican nomination for governor of the state.——Dr. James McClung, Richwood, is the Republican nominee for state senator.——Dr. Marion R. Stone, Parkersburg, has been commissioned captain, and Dr. Francis T. Ridley, Bluefield, first lieutenant, M. C., W. Va. N. G.

State Society Election.—At the annual meeting of the West Virginia State Medical Association held in Webster Springs, July 16-17, the following officers were elected: Dr. Frank LeM. Hupp, Wheeling, president; Dr. J. R. Bloss, Huntington, vice-president; Dr. A. P. Butt, Davis, secretary (reelected); and Dr. H. G. Nicholson, Charleston, treasurer. The next meeting will be held in Charleston.

WISCONSIN

State Board Appointments.—Dr. J. M. Dodd, Ashland, has been appointed a member of the State Board of Medical Examiners, vice Dr. F. Gregory Connell, Oshkosh, resigned.——Dr. W. L. Thompson, Milwaukee, has been elected president of the State Board of Medical Examiners, and Dr. J. M. Beffel, Milwaukee, has been reelected secretary.——Dr. Charles H. Stoddard, Milwaukee, has been appointed a member of the State Board of Health, vice Dr. Joseph Barber, Marathon, resigned.

Personal.—Dr. F. V. Watson, Antigo, was injured in the Great Northern train wreck near Evansville, Minn., July 14.——Dr. H. R. Adams, Marinette, is said to be critically ill.——Dr. C. J. Rollefson, West Superior, has been appointed instructor in science and medical advisor of the State Normal School.——Dr. E. T. Lobedan, Wauwatosa, has been appointed medical assistant in the charge of child welfare work by the health commissioner of Milwaukee.——Dr. George C. Ruhland has been appointed director of bacteriology of the Milwaukee Health Department.——Dr. Earl F. Baur, Milwaukee, has resigned as resident physician at the Emergency Hospital, to accept a position as surgeon with the Illinois Steel Company, Chicago.——Dr. and Mrs. Joseph Schneider, Milwaukee, have donated $10,000 to the German-English Academy High School building fund.

GENERAL AND FOREIGN

Railway Surgeons Meet.—At the annual meeting of the Norfolk and Western Railway Surgeons' Association at Cedar Point, near Sandusky, Ohio., June 18-19, the following officers were elected: President, Dr. Joseph A. Hall, Cincinnati; vice-president, Dr. W. V. Atkins, Blackstone, Va., and secretary-treasurer, Dr. T. D. Armistead, Roanoke, Va.

Tri-State Society Meeting.—The Northern Tri-State Medical Association held its thirty-ninth annual meeting in Detroit, July 2-3, under the presidency of Dr. Charles N. Smith, Toledo. It was decided to hold a mid-year meeting in Toledo in January. Dr. Victor C. Vaughan, Ann Arbor, Mich., was elected president; Dr. C. C. Terry, South Bend, Ind., vice-president; Dr. G. W. Spohn, Elkhart, Ind., secretary (reelected), and Dr. J. A. Weitz, Montpelier, Ohio, treasurer (reelected).

Honors for Kocher.—On the completion of his fortieth year as member of the faculty of the University of Berne, Prof. T. Kocher was given an ovation recently, by his friends and pupils. The Swiss government, the universities and institutes sent representatives, as did many of the European surgical societies. The *Deutsche Zeitschrift für Chirurgie* issued a special volume of 818 pages as a *Festschrift* in his honor. He celebrated the occasion by presenting the university with $40,000 to endow scientific research. It will be remembered that Kocher was awarded the Nobel prize in medicine in 1909 for his works on the thyroid. He was born Aug. 25, 1841, and is thus in his seventy-first year.

International Congress of Medicine.—This congress will meet in London, England, August 6-12, 1912. The Executive Committee for the United States consists of the following: William S. Thayer, M.D., president, Baltimore; Alfred Reginald Allen, M.D., secretary, Philadelphia; Frank Billings,

M.D., Chicago; William T. Councilman, M.D., Boston; George W. Crile, M.D., Cleveland, Ohio; John B. Elliott, M.D., New Orleans; J. Marshall Flint, M.D., New Haven, Conn.; Albion W. Hewlett, M.D., Ann Arbor, Mich.; Abraham Jacobi, M.D., New York; Theodore C. Janeway, M.D., New York; Lawrence Litchfield, M.D., Pittsburgh; Herbert C. Moffitt, M.D., San Francisco. Applications for membership in the congress can be obtained from the Secretary, Dr. A. R. Allen, 2013 Spruce Street, Philadelphia.

Honorary Degrees for Medical Men at Michigan University.—At the seventy-fifth commencement of the University of Michigan, honorary degrees were confined to graduates of the university and to former members of the faculty. The following is the list of medical men who received degrees with the statement made at their presentation: The degree of Master of Arts was conferred on Dr. James C. Wood, a practitioner of Cleveland, Ohio, surgeon and author, and formerly a member of the faculty of the Homeopathic Medical College of the University of Michigan; Dr. Otto Landman, a practitioner of Toledo, Ohio, a graduate of the literary class of 1884, and of the medical department in 1887; known for his contributions to the science of ophthalmology, and Dr. Harold Gifford, professor of ophthalmology in the University of Nebraska, a graduate of the class of 1882 in the Department of Medicine and Surgery, and a research worker in his chosen specialty. The following received the degree of Doctor of Science: Dr. John Elmer Weeks, professor of ophthalmology in New York University, a graduate of the class of 1881 in the Department of Medicine and Surgery, known as an author and research worker, joint discoverer of the Koch-Weeks bacillus; Dr. John Jacob Abel, professor of pharmacology in Johns Hopkins University; a graduate in arts in this university in 1883, professor of materia medica and therapeutics in this university from 1891 to 1893; distinguished for his researches and original contributions, and Dr. Henry Sewall, professor of medicine in the University of Colorado, professor of physiology in this university from 1882 to 1889. Dr. Sewall's research on immunization to the venom of the rattlesnake, done while a professor in this university, laid the foundation for the discovery of diphtheria antitoxin. The following received the degree of Doctor of Laws: Dr. William Henry Howell, professor of physiology in Johns Hopkins University, formerly a professor of histology and physiology in this university; distinguished teacher and investigator; a physiologist of the first rank, and Dr. James Playfair McMurrich, professor of anatomy in the University of Toronto, for thirteen years professor of anatomy in the University of Michigan; distinguished as a teacher and for learned contributions to the sciences of biology and anatomy.

The Plague Situation.—It is reported from San Juan, P. R., that three additional deaths occurred from plague, July 20, in the suburbs of that city, and one additional suspect has been found. These cases had not been reported to the authorities. Up to July 21, there had been thirty-seven cases and twenty-six deaths throughout Porto Rico. The Haffkine serum has been administered to all persons living in the infected district and the extermination of rats is being actively carried on. One additional case of plague is reported from Havana under date of July 22, making three in all, with two deaths. The situation, however, is well in hand. The extermination of rats is being actively carried on and examination of those killed has revealed no infected rats either in Havana or in any Porto Rican or United States port. Havana has been quarantined against by Florida and all passengers attempting to land at Key West or other Florida ports are detained for seven days at the Prisconia station. The detention at other coast ports is not so lengthy on account of the longer passage to these ports. The quarantine against Cuba, first established at Key West, has been relaxed somewhat. First-class passengers with certificates of health and not coming from an infected port are allowed to land. The health authorities, cooperating with those of the Public Health Service, are active at all points from Galveston to Boston in exterminating and examining rats, fumigating arriving vessels, etc. Dr. J. J. O'Connell, health officer of the port of New York, has begun the use of sulphurous acid gas in fumigating vessels in place of sulphur which is burned in the hold of the vessel. The sulphurous acid is in liquid form and after the hatches of the vessels are battened, the liquid is poured through a tube into the various parts of the vessel where it almost instantly volatilizes and penetrates every portion, killing the rats and fleas. Congress has appropriated $100,000 for the carrying on of plague prevention work by the public health authorities. Col. Jefferson R. Kean, of the commission of army officers, sent to Porto Rico to study the plague situation, believes it will be difficult to keep the plague out of the United States, though it will probably under the vigorous efforts of the health authorities not attain any extensive foothold in the American ports. One case of yellow fever is reported from Panama on the steamship *Chile* arriving from Guayaquil which seems to be a focus of infection for plague also. The government authorities of that port have arranged to secure the assistance of experts from Panama in a plan for the eradication of tropical diseases from that badly infected port. New Orleans is making extraordinary efforts to keep out the plague. Dr. Oscar Dowling, state health officer, has personally visited Havana to study the situation. Premiums are given for the extermination of rats at New Orleans, as well as at most of the other ports of the coast. *Public Health Reports* of July 19, 1912, contains an article on eradication and prevention of plague by Dr. W. C. Rucker of the Public Health and Marine-Hospital Service, who has had much experience in plague prevention in California. This is a complete summary of the measures necessary for the prevention of plague by the elimination of rats and other flea-carrying rodents in city and country. (The subject of plague is taken up editorially in this issue of THE JOURNAL.)

CANADA

Academy Election.—At the annual meeting of the Toronto Academy of Medicine, Dr. R. A. Reeve was elected president; Dr. H. J. Hamilton vice-president; Dr. W. Harley Smith, honorary secretary, and Dr. W. A. Young, honorary treasurer.

Provincial Medical Association Meeting.—The Manitoba Medical Association held its annual meeting in Winnipeg, May 21-22. The meeting was clinical throughout, and was probably appreciated more than the former gatherings at which programs of formal papers were presented. The following officers were elected: president, Dr. J. S. Matheson, Brandon; vice-presidents, Drs. E. C. Beer, Brandon, and T. R. Ponton, Macgregor; honorary secretary, Dr. Jasper Halpenny, Winnipeg; honorary treasurer, Dr. R. F. Rorke, Winnipeg, and executive committee, Drs. A. E. Walkey, Portage la Prairie; W. A. Bigelow, Brandon; James McKenty, Winnipeg; W. J. Harrington, Dauphin, and R. D. Ferguson, Pilot Mound. The next meeting will be held in Brandon.

Personal.—Dr. J. A. Ashbaugh, medical health officer for Windsor, has been appointed camp sanitary officer of the Western Militia District, Goderich.——Dr. Edward A. Neff, Ingersoll, Ont., has been appointed a member of the staff of Brigham Hall Insane Hospital, Canandaigua, N. Y.——Dr. Lawrence J. Rea, resident pathologist in the Montreal General Hospital and assistant professor of pathology in McGill University, Montreal, has been appointed assistant professor of pathology in Harvard Medical School and resident pathologist to the new hospital of Harvard University.——Drs. W. Turnbull, O. C. Dorman and George Stephens have been appointed assistant medical health officers of Winnipeg.——Dr. M. R. Bow has been appointed medical officer of Regina, Sask., and Dr. J. C. McDougall, Parrsboro, has been appointed Indian agent for Cumberland County, vice Dr. F. A. Rand, Parrsboro.

LONDON LETTER

(From Our Regular Correspondent)

LONDON, July 6, 1912.

The National Insurance Act: Wholesale Resignation of Contract Work

As explained in previous letters to THE JOURNAL, a weak point in the profession's otherwise strong resistance to the national insurance act is that the practically unanimous pledge to refuse to work unless the "six points" are granted could be nullified by the government handing over the administration of medical benefit to the friendly societies for their administration. This has been remedied by the issuance of a supplementary pledge, which has also been signed with practical unanimity, placing the resignations of present contract work by the whole profession in the hands of the British Medical Association, to be used if necessary. Already in several large districts—Leicestershire, Rutlandshire and part of Yorkshire—the local committees of the association have taken the initiative and sent in to the friendly societies the resignations of all contract work. Thus the profession has taken the offensive while the government is investigating the sample accounts of numbers of doctors preliminary to further negotiation. This has produced considerable irritation in the friendly societies.

The negotiations of the British Medical Association with the government appear to have reached a deadlock. In reply to their demands Mr. Lloyd George, the Chancellor of the Exchequer, says that the government has always recognized

that the average medical remuneration per head should be not less than that received under existing conditions, but greater in view of the greater demands that are likely to be made on the work of the profession under the act. The government also recognizes the necessity of paying specially for certain extras, including visits, mileage, etc., but can hold out no hope of such provision as would yield the sum demanded by the association ($2 per insured person for ordinary medical attendance, to which is to be added payment for extra services as well as for drugs and appliances). The chancellor states that if the demands of the profession were to be granted it would mean that the ordinary assured income of a physician would be not less than $5,000 per annum, which would be greatly in excess of what are ordinarily believed to be professional earnings. In order to provide such a sum it would be necessary to ask Parliament for another $5,000,000. The Council of the British Medical Association has replied that the chancellor's figures are purely hypothetical.

Tuberculosis in South Africa

A commission on tuberculosis appointed by the South African government reports an alarming increase, especially among the colored races. The primary factor seems to be its introduction into many centers previously free from it by the immigration of consumptive persons who mostly come to South Africa to obtain the benefits of the climate. It would therefore be desirable to exclude every immigrant suffering from open tuberculosis or any form likely to develop into that stage, but in practice there are several difficulties and objections to this course. The following rules are therefore recommended: 1. A tuberculous immigrant should be admitted only through a recognized port of entry proclaimed for the purpose. 2. He should be admitted only on a permit entitling him to remain in the country for a definite time. 3. The permit should be subject to the immigrant keeping under surveillance and observing measures for the prevention of infection. 4. He must reside at a specified place. 5. He must present himself for periodic examination by the district surgeon.

A New Carrier of Sleeping-Sickness

The Sleeping-Sickness Commission dispatched to Northern Rhodesia has issued a report confirming the view, held by some authorities, that the tsetse fly, known as *Glossina morsitans* is, like the *Glossina palpalis*, a carrier of sleeping-sickness. This fact is of considerable importance in consequence of the different distribution of the two flies. *Glossina palpalis* is found only close to water where there is sufficient vegetation to provide it with shade, and is not known to occur at a greater altitude than 4,000 feet. It is rarely found more than 30 yards from water, except where a few flies have followed men or animals further than this, but which soon return. On the other hand, the distribution of *G. morsitans* is wide; it occurs in belts which may or may not be well defined and which cover enormous areas. It does not seem to be dependent on the presence of water. Thus, in the management of sleeping-sickness due to the *G. palpalis* it is a comparatively simple matter to remove the affected population to such a distance from water as will ensure safety. This measure has proved most effective. In dealing with *G. morsitans* there are three possibilities—removal of the population, removal of the source of infection and removal of the fly. The first presents enormous difficulties arising from the number of persons (about 150,000) concerned, from the distances to be traveled and from the unwillingness of the natives. For the second, something might be done in the way of discovery and segregation of all infected natives, had it not recently been discovered that the trypanosome of the disease is carried by several of the varieties of antelope inhabiting the affected areas. It is proposed to appoint a staff of trained entomologists to investigate the whole question and to determine how the destruction of the flies may be compassed. In the meantime all suitably placed populations are being removed to fly-free areas, domestic animals which might act as reservoirs of trypanosomes or attract the fly are being prohibited and the destruction of game in the immediate vicinity of settlements and villages is being encouraged.

The Parliamentary Committee on Nostrums

Dr. Nestor Tirard, medical editor of the British Pharmacopeia, has given further evidence. He stated that the general medical council wished to see established a laboratory for the standardization of drugs difficult to standardize by the usual physical methods. There were certain tests involving vivisection which pharmacists could not be expected to perform. Such a government laboratory would standardize the various serums and vaccines introduced. Every bottle of medicine should have on it a label indicating the amount of scheduled poisons contained in it and exaggerated claims should not be permitted. The proper laboratory for ascertaining the value of drugs was the hospital.

On behalf of the British Medical Association, the medical secretary, Dr. Alfred Cox, gave evidence. Direct and indirect injury to the health of the people arose from the use of proprietary medicines; opium, alcohol and cocain habits were established and sufferers from cancer were led to trust to a "cure" whereby time was fatally lost. The newspapers obtained a large revenue from advertisements of such productions and consequently gave no help in exposing the nature of the traffic. Frauds were perpetrated on the public both by grossly exaggerated statements as to the curative properties and by false statements as to the component drugs. The association made the following proposals for dealing with the evil: 1. For medicines supplied otherwise than on a medical, dental or veterinary prescription no condition of sale short of the publication on each package of the name and quantity of each of its constituents should be permitted. 2. The label should be made to constitute a warranty and false description, whether on label or advertisement, should be made an offense. 3. The provisions of the Food and Drugs Act should be made to apply to proprietary medicines. 4. The government should institute prosecutions when the conditions of sale did not comply with the preceding regulations. 5. The indecent advertisements act should be amended in accordance with suggestions made by the association to the government. In cross-examination, Dr. Cox was asked whether these recommendations would not destroy to a large extent the sale of proprietary medicines by enabling any persons to make them up from the statement on the labels, and thus their proprietary value would be destroyed. He answered that there would be a great risk of many being destroyed, but that some of the best kind would not, for it was sometimes the method of preparation which gave these articles their chief value. It would be a great advantage to the public to limit the sale of proprietary medicines. Asked whether there was any pecuniary rivalry between the medical profession and the sellers of proprietary medicines, he replied that on the whole the income of the profession was indirectly increased by the traffic. The delay which they caused in the adoption of proper treatment increased the work of the profession. The *British Medical Journal* did accept advertisements of some proprietary medicines, but it was a strict rule that in all cases the ingredients should be disclosed, and that claims that could not be substantiated should not be made.

At a meeting of the Medico-Legal Society, Dr. Eric Pritchard read a paper on the state regulation of the manufacture and sale of patent medicines. The various government departments, he said, had shown themselves singularly remiss in protecting the public against the wiles of the quack, and the deliberate policy of the government appeared to have been to leave the correction of the evils of quackery to the spread of education, rather than to legislation and prosecution. Not only were our laws ill adapted for the protection of the public, but the administration was lax and wanting in energy. England was fast becoming the happy hunting-ground for the filibustering vender of quack medicines, for in almost every other country there had been enactments for the protection of the public. A survey of these measures when compared with our own antiquated and cumberous machinery afforded ample food for reflection. It was clear that the magnitude of the public interest, and the vastness of the commercial transactions involved in the traffic in secret preparations and other commodities demanded that there should be a separate and independent machinery to control these operations. Advantage would accrue to the public by the adoption of the principle of accurate branding of the goods, and the strict censorship of all the advertisements concerned with them. In the discussion which followed Sir John Tweedy (the president) said that there was no doubt that where remedies were prepared by firms of reputation and standing many of them were very valuable. But it was equally true that many so-called patent foods were wicked frauds. Mr. George Bernard Shaw said that in the work of attempting to minimize the amount of falsity in statements placed before the public they must not expect the support of the public, for they would not get it. They must look for support to a small body of genuinely public-spirited men, men who were not interested in individuals, but in the national health in general. When that small body found itself opposed by tremendous commercial interests, and the way in which the public took up patent medicines, it would find its position exceedingly difficult.

PARIS LETTER

(From Our Regular Correspondent)

PARIS, July 5, 1912.

Foundation in the Paris Medical School of a Clinical Chair of Tuberculosis

About twelve years ago M. Valencourt left his property to found a clinical chair at the Faculté de médecine de Paris, under the direction of his personal friend Professor Debove. The property, which now amounts to $280,000 (1,400,000 francs), is about to be used to found a clinical chair in the university for research on tuberculosis, the occupant of the new chair to give up all practice outside of the hospital and all idea to change of position. The new policy thus sanctioned by the medical school gives much satisfaction to practitioners who have protested against the use of the title of professor as a means of attracting a more extended practice. There has also been much justified protest against the changes in professorships some of which have become known as "chairs of passage."

The First Meeting of French School Physicians

The first Congrès des médecins scolaires was held in Paris, June 20-22, with M. Guist'hau, minister of public instruction, presiding. The question of medical inspection in public and private elementary schools was first considered. Dr. Doizy, delegate from Ardennes, who recently reported on medical inspection in European and American schools, commented on the conclusion of the report, namely, the organization of an office of local medical inspectors under the supervision of a departmental medical inspector. The local medical inspectors would be appointed by the chief inspector of schools, after competitive examinations and on recommendation of the departmental council of hygiene.

This question called forth an interesting discussion. Dr. Noir recalled the failure of the law on the protection of public health in 1902, and declared that it would be the same with the law on school hygiene, because the medical profession, as a whole, is not connected with the organization projecting this law. Dr. Noir prefers that the office of inspector be given, not to a few physicians after competitive examination, but to all physicians, under the control of the medical *syndicats*. Dr. Jeanne expressed the same opinion, but Dr. Papillon was opposed to giving complete power to the *syndicats*. Dr. Mosny agreed with Drs. Noir and Jeanne. The duty of the school physician, he thought, should be the hygienic care of the whole school; therapeutics being the exclusive domain of the family physician. The selection of a school physician should be made, not by an incompetent functionary, but by all the local physicians, including those who are independent of any professional group. In cities, this would necessitate a competitive examination, to be judged by the local physicians. Dr. Decourt thought that, after giving such a subordinate rôle to the school physician, without the right even to make a diagnosis, merely referring the student to his physician, a competitive examination did not seem justified. Dr. Gourichon, representing the Société des médecins inspecteurs de la Seine, was like Dr. Mosny, of the opinion that competitive examination was the best way of securing academic physicians. In cities of less than 50,000 and in the country the selection could be made by the chief inspector of schools, requiring every possible guaranty. Dr. Lafontaine, representing the Syndicat des médecins de la Seine, moved that the *syndicats* choose the medical inspectors and have the responsibility for their nomination. The minister of public instruction and Dr. Chapon, general secretary of the congress, expressed themselves in favor of competitive examination. The assembly shared this opinion and Dr. Lafontaine's motion was rejected.

The second question taken up by the meeting was that of physical education in elementary schools. After discussion, the following resolutions were adopted:

1. Organized physical education is indispensable in public and private elementary schools. This physical education should be rational and scientific; it should employ games, manual work and gymnastics.

2. Gymnastic instruction should be given for at least half an hour every day. A certain number of points on physical education should be compulsory in all examinations, including those for an academic degree.

The Sale of a "Corn-Cure" an Illegal Practice of Medicine

The Toul court has imposed a fine of $100 (500 francs) on the managers of a local bazar and coffee room, who put on sale a supposed corn-remover, for illegal practice of medicine, and awarded $20 (100 francs) damages to the Syndicat des pharmaciens, civil party to the suit.

Intramuscular Etherization

Recently the Société de chirurgie has discussed chiefly the intramuscular method of etherization, advocated by Dr. Descarpentries (THE JOURNAL A. M. A., May 25, 1912, p. 1612). Dr. Peugniez, of Amiens, has tried this new method with a young woman, aged 18, who had a nasopharyngeal polypus. As she weighed nearly 128 pounds (58 kilos), he injected about 60 c.c. of ether, making every two minutes injections of 5 c.c. of ether in each buttock. At no time did the patient sleep; she presented a phase of excitation for twenty minutes, when chloroform had to be given. The quantity of anesthetic used was not modified by the injection of ether and for several days the patient felt very intense pain in the regions in which the injections had been made.

Dr. Sebileau, *agrégé* professor at the Faculté de médecine de Paris, protests against intramuscular etherization. It appears to be advised in operations on the mouth, on the pharynx or on the upper air passages. For such cases, Dr. Sebileau remarks, this method is very practicable and has been used for a long time. An intercricothyroid tracheotomy is performed and ether-vapor is introduced into the trachea by means of a cannula placed in the wound.

Dr. Pierre Delbet, professor of clinical surgery at the Faculté de médecine de Paris, thinks that this method of intramuscular injections is entirely without experimental basis. A quantity of ether proportioned to the weight of the individual is injected without considering the personal susceptibility of the patient to anesthesia. There are some patients who will be made unconscious by a very small quantity of ether; there are others, often of about the same weight, to whom it is necessary to give a large amount. Again, once the anesthesia is thus introduced into the system, there is no way to suspend its action. If an accident results, one has not the resource of stopping the etherization, as is possible in the inhalation method; and this constitutes a very grave danger.

Dr. Delbet relates the history of a patient operated on by Dr. Picot for an ulcerated tumor on the base of the tongue. Ether was administered intramuscularly from 8:40 until 9:30, about 30 c.c. of ether being used. The operation was started at 9:20 and terminated successfully, with an incomplete but quite sufficient anesthesia. The patient was fully awake at 11; at 2 he had an epileptiform crisis which lasted several minutes and which was followed by another at 5. At 6 he was very restless and his pulse was 140. He died the next afternoon at 3, after having many similar attacks. Autopsy did not reveal the cause of death; the vessels of the circle of Willis and the cerebral arteries were perfectly healthy. It is possible that this may have been a mere coincidence. But, in citing this instance, Dr. Delbet recalls that Doré and Braun, in experiments performed some time ago, produced death by ether injections in a dog; and after these injections the animal had an epileptiform crisis.

Dr. Tuffier, *agrégé* professor at the Faculté de médecine de Paris, agrees completely with Delbet that intramuscular etherization is a blind and dangerous procedure. He never wished to use it, but, urged by those around him, he decided to try it in two cases. The first patient was a young woman from whom he had to remove a tumor of the mouth. He injected 20 c.c. of ether in one buttock, 30 c.c. in the other, and waited vainly one-half hour for anesthesia; finally, he resorted to chloroform, and the patient suffered intensely in the regions in which the injections were made. The second case was an abscess of the liver in a cachectic, exhausted man who weighed 161 pounds (73 kilos). An injection of 70 c.c. of ether was made. The anesthesia was at no time complete, though sufficient to permit the operation. Immediately following the injection, however, the patient was cyanosed, and in the afternoon, after showing symptoms of asphyxia, he died.

Dr. Walther, *agrégé* professor at the Faculté de médecine de Paris, has used intramuscular etherization three times. The first patient was a woman, aged 37, who had a sarcoma of the jaw. She weighed 115 pounds (52 kilos) and an injection of 45 c.c. of ether was made. The operation was begun a quarter of an hour after the first injection. During this time the patient felt some pain in the buttocks; she had tremors, palpitations, a sense of suffocation, and her breath smelled of ether. After two awakenings, ethyl chlorid was given and then chloroform. The patient was awakened at the end of fifty-five minutes. She had not been conscious of the operation, but on the following days she felt very intense pain in the lower limbs and there was an eruption of pigmented spots and ecchymoses on the thigh and the legs which did not disappear until eight days later. The two

other patients were a man, aged 40, operated on for an axillary inflammation, and a young woman, aged 29, on whom a grattage and injections of zinc chlorid were made for a tuberculous osteo-arthritis of the instep. The former patient weighed 150 pounds and received 80 c.c. of ether; the young woman weighed 154 pounds and received, also, 80 c.c. of ether. In the two cases it produced similar symptoms: excitement, pupillary dilatation and palpitations. Anesthesia was incomplete and chloroform was resorted to; after the awakening the patients were seized with vomiting and had a sensation of stifling which lasted throughout the day. On the days following the operation the legs were numb and painful, and spots and ecchymoses, which became confluent, appeared on the thigh and leg, while a large hematoma could be felt deep in the tissues.

On the other hand, Dr. J. L. Faure, *agrégé* professor at the Faculté de médecine de Paris, has had some favorable results with intramuscular etherization. He used this method for the operation of a cancer of the tonsil, large as a turkey egg, in a woman, aged 30. He thus avoided all the inconvenience which other methods of anesthesia in operations on the buccal cavity entail. Anesthesia was obtained by making ten successive injections, which were well borne, but it was twice necessary to have the patient inhale a few drops of chloroform. Eventually, however, she showed symptoms of slight sciatica in the left side. Another patient who received 60 c.c. of ether went to sleep without complaining and a large goiter was removed. A few drops of chloroform were necessary, however, at first. The operation lasted about twenty minutes and the awakening took place under normal conditions.

BERLIN LETTER

(From Our Regular Correspondent)

BERLIN, June 28, 1912.

Personal

Professor Alzheimer, a pupil of Kraepelin, has been called from Munich as director of the nerve clinic at Breslau, to succeed Professor Bonhöffer who has removed to Berlin.

Minor Notes

For the reception of the participants in the sixth international congress for obstetrics and gynecology, which will meet in Berlin next September, the Berlin city government has appropriated the sum of $3,000 (12,000 marks).

The assistants (interns) at the municipal hospitals have petitioned the municipal government for an increase of salary and a longer leave of absence.

The Free Association of Surgeons of Berlin (Freie Vereinigung der Chirurgen Berlins) which has been in existence for twenty-five years, transformed itself at the beginning of this month into the Berlin Surgical Society (Berliner Gesellschaft für Chirurgie) and adopted a constitution and by-laws. Sonnenburg was elected president and Israel and Körte vice-presidents.

Museum of Hygiene at Dresden

The Dresden city council has confirmed the plan for the erection of a museum of hygiene. In pursuance of this plan the city under certain conditions gives up its share of the profits of the international hygiene exposition, amounting to over $250,000 (1,000,000 marks) and contributes land to the extent of at least 6,000 square meters (1.5 acres) and pays in addition a yearly contribution of $37,500 (150,000 marks). The condition is imposed that the museum shall be opened at latest by the beginning of 1916.

Measles and Diphtheria in the Schools

The frequency of measles and diphtheria and means for their suppression were discussed at the recent meeting of the school physicians of Germany. It was again established that measles is by no means so insignificant a disease as is commonly supposed. In 1909 there were eighty-one classes closed on account of measles in Berlin, as compared with forty-four for scarlet fever and thirty-one for diphtheria. The spread of measles takes place chiefly through the schools and it forms a typical school-epidemic disease. Of the pupils entering school for the first time, from 50 to 60 per cent. have had measles.

The measures hitherto in use by the schools for suppressing measles, namely, the exclusion of those attacked, closing the classes if necessary, and disinfection of the school rooms are not sufficient, according to the opinion of the speakers. Even the immediate exclusion of the sick children cannot hinder the spread of the infection, for communication takes place before the eruption has appeared, usually at a stage when the child is not known to be sick. The speaker therefore recommended in a similar way as has been recommended by an Austrian medical official, that the class be closed immediately after the discovery of one infected child, for from five to nine days. Also children from families in which there is measles should be excluded from school for fourteen days even if they are well but have not yet experienced measles. With reference to diphtheria many speakers demanded strict exclusion of convalescents and so-called bacillus-carriers.

Organization of the Insurance Physicians of Berlin

The enforcement of the imperial insurance law will cause a notable change in the relations of the Krankenkassen in Berlin. The Krankenkassen are endeavoring to form an alliance of great extent for which they had already prepared. Hand in hand with this went efforts to unite also the various groups of insurance physicians. In a meeting of the insurance physicians held a few days ago this unification was effected. After a short discussion the following resolutions were adopted: (1) The assembly declares itself satisfied with the formation of the managing committee of insurance physicians for Berlin. (2) As a foundation for this formation there must be a system of equality among the insurance physicians. The following definition is hereby assumed: The committee of the association to be formed has the function of assisting, as far as possible, in the contracts of groups of insurance physicians, without reference to the principle of employment of the insurance physicians which prevails in the insurance company. Accordingly, the committee shall not have the right to decide in regard to the system to be employed in selecting insurance physicians. (3) The committee shall prepare a standard contract for Berlin. It shall have the function of securing an agreement with regard to the standard contract with the central committee of the Krankenkassen or with any new insurance organization which may be formed, but the individual organizations of insurance physicians shall assume the duty of termination of the contracts. The contract commission of the Aerztekammer is to determine whether the individual contracts correspond in principle to the standard contract. (4) The committee shall at first consist of fifteen members: three from the association of freely chosen insurance physicians; three from the association of Berlin insurance physicians, and three from the association of Berlin factory physicians. The remaining six shall be chosen from the other associations of insurance physicians: two from the groups with a system of free choice; two from those with limited free choice, and two from those having contract physicians. (5) The groups acting under the fee bureau (Tarifkassen) of the Leipzig league belong to the system of free choice, as anyone may join the Leipzig league.

These resolutions clearly set forth the purpose of this new organization of the insurance physicians. Without regard to the various systems of employing insurance physicians, a unification of the conditions for appointment for the insurance physicians will be secured, and insurance physicians will be prevented from underbidding each other either in regard to fees or by the provision of other important conditions, and there will be no occasion for one group of insurance physicians to be played off against another by means of the negotiations for the contract. Moreover, all this is to be accomplished in a peaceful way, as the resolutions show that an agreement is to be sought with the central organization of the Krankenkassen with reference to standard conditions. In this way a free association will be established corresponding to the provision which the first draft of the imperial insurance law contemplated, but which was not incorporated in the law, namely, that the parties concerned shall form a central commission to have charge of regulation of the relations between the Krankenkassen and their medical officers, and especially for an agreement with regard to the future regulation of their medical service.

VIENNA LETTER

(From Our Regular Correspondent)

VIENNA, July 2, 1912.

American Surgeons in Vienna

A few days ago, a number of well-known surgeons from the United States arrived here to visit the hospitals and clinics of Vienna and observe the medical work. As some of the surgeons brought their families with them, there were over forty in the party and were received with the utmost cordiality. Their trip through Europe has been arranged by the Interurban Surgical Club of America. Drs. Cushing,

Mayo, Finney, Bartlett, Ochsner and Crile are a few of the well-known surgeons of the party, while the others are more or less known by the reputation they enjoy among their confrères who come to Vienna to spend a year or so in study. At the invitation of the professors of the General Hospital, the visitors witnessed several operations in Hochenegg's clinic and an operation for tumor of the brain in Eiselsberg's clinic and gynecologic demonstrations at Professor Schauta's clinic and kidney and prostate surgery at Zuckerkandl's. All other institutes of medical interest were visited; the new clinics, the great lunatic asylum, the *x*-ray institutes, etc. To those who were interested in fine arts, an opportunity was afforded to view the treasures of paintings and sculptures owned by the emperor and the state. Several excursions were made to see the beauty of the surrounding country.

After a few days' stay in Vienna, the tourists left for Stuttgart and then on to Heidelberg, Frankfort and Bonn. Having already visited Hamburg, Berlin, Leipsic and Jena before coming to Vienna, they will have gained a fairly good insight into the work done in the German and Austrian medical colleges.

Postgraduate Work in Innsbruck

The university of Innsbruck will arrange for the months of July and August a series of postgraduate classes for practitioners from all countries. Innsbruck is situated in the midst of the grand Alpine scenery of the Tyrol, and is, comparatively speaking, a cheap place. It has about 80,000 inhabitants. Its medical school is regarded as very good especially in surgery and pathology. The postgraduate classes comprise medicine, gynecology and surgery, as well as classes in dermatology and diseases of children.

An Interesting Feat of a Member of Parliament

A record was won quite recently by Dr. Baczynsky, member of the Austrian parliament, which was not devoid of medical interest. For political reasons he resolved to obstruct the parliamentary machine and commenced to deliver a speech at 7 p. m. He continued to speak for thirteen hours and eight minutes. During his speech his friends, from time to time, succeeded in getting a few minutes' rest for his voice by applauding so vehemently and persistently that the chairman had no ground to suppose the orator had finished his speech. When finally at 8:08 the next morning the speech was ended, Dr. Baczynsky was at once taken care of by a medical friend. He was in a state of exhaustion. His pulse was 142, the temperature was 37.5 C. and he complained of a dry, sore parchment-like feeling in the throat. No laryngoscopic examination was made. He had to lie down, was rubbed thoroughly, especially on the thorax, which was very tender, and he fell asleep while being rubbed. Altogether he had had only thirty-five minutes' rest during the speech, which was during the applause; all the other time he was forced to speak loud and distinctly, and had only now and then a sip of water, lemonade and a little soda. He was perfectly well again in the evening, "fit for another thirteen hours' speech" as he remarked. This remarkable endurance has not been equaled, but was nearly reached a few years ago by Dr. Lecher, who spoke for twelve hours continuously in parliament.

Marriages

EDWARD ALFRED JONES, M.D., Winnipeg, Man., to Miss Maude Rebecca Kelley, of Hanford, Cal., at Winnipeg, June 24.

HUGH RAYMOND SPENCER, M.D., to Miss Lillian Estella Elliott, both of Baltimore, at Baltimore, July 6.

ERNEST MONROE HARTFIELD, M.D., to Miss Marie Gabbert, both of Chadwick, Ill., at Chadwick, July 7.

AUSTIN FUNK, M.D., Jefferson, Ind., to Miss Norma Rike, Connorsville, Ind., at Connorsville, July 6.

THOMAS WILLIAMS LEWIS, M.D., Chicago, to Miss Mamie B. Fauntleroy, at Lynchburg, Va., July 11.

C. C. BLISS, M.D., Delphos, Ohio, to Miss Mary Penthana, Springfield, Ohio, at Springfield, July 9.

AUGUST EDWARD GERHARDT, M.D., Seattle, Wash., to Miss Elizabeth Walsh, at Seattle, July 17.

JOSEPH ALLEN LOCKE, M.D., Index, Wash., to Miss Lola B. Gordon, Vancouver, B. C., June 19.

CORTEZ HOLIDAY WHEELER, M.D., to Miss Agnes Ritter, both of Portland, Ore., July 2.

Deaths

Thomas Hewson Bache, M.D. Jefferson Medical College, 1860; a great-great grandson of Benjamin Franklin; one of the founders of the Children's Hospital, Philadelphia; a vice-president of the Pennsylvania Institute for the Deaf and Dumb; a fellow of the College of Physicians of Philadelphia; surgeon of the Seventh Pennsylvania Volunteer Infantry and later major and brevet lieutenant-colonel M. C., U. S. Army, during the Civil War; one of the oldest practitioners of Philadelphia; died at his home, July 8, from senile debility, aged 86.

James M. Alden, M.D. Jefferson Medical College, 1871; a member of the Medical Society of the State of Pennsylvania; at one time superintendent of the Insane Asylum at Norfolk, Neb.; a pioneer physician of Pierce County, who served two terms as state senator from his district; died at the Methodist Hospital in Omaha, May 3.

Levi Lloyd, M.D. Texas Medical College and Hospital, 1874; one of the early settlers of Jacksonville, Texas; in 1902 was elected to the legislature from Cherokee County; in 1908 state senator from the same district; died at his home in Jacksonville, July 7, after an illness of several months.

Alfred J. Ihne, M.D. St. Louis College of Physicians and Surgeons, 1905; of Fosterburg, Ill.; a member of the American Medical Association; died in St. Joseph's Hospital, Alton, July 5, from septicemia a few days after an operation for appendicitis, aged 35.

William G. Moore, M.D. University of Louisville, Medical Department, 1884; of Georgetown, Ky.; coroner of Scott County for the last eight years and well known in central Kentucky; died suddenly, July 7, from apoplexy, aged 65.

John E. Sawyer, M.D. Hahnemann Medical College, Chicago, 1884; for a number of years a practitioner of New Richmond, Wis., St. Paul, Minn., Colorado Springs and Chicago; died recently at his home in Chicago of heart disease, aged 57.

Daniel H. Smith, M.D. College of Physicians and Surgeons, New York, 1873; for nineteen years a police surgeon of New York; died at his home in that city, July 10, aged 60.

James Ray Light, M.D. Maryland Medical College, Baltimore, 1909; of Lebanon, Pa.; a druggist of that city; died at his summer camp at the Union Water Works, North Annville Township, July 9, following a hemorrhage, aged 38.

George Washington Tobias, M.D. Bellevue Hospital Medical College, 1877; a member of the Medical Society of the County of New York; died at his home in New York City, July 4, from cerebral hemorrhage, aged 71.

Zipporah Brooks Wales, M.D. Woman's Medical College of Pennsylvania, Philadelphia, 1873; of Elmira, N. Y.; died in the Arnot-Ogden Hospital in that city, July 4, twelve days after a surgical operation, aged 77.

Andrew Buford Marcum, M.D. University of Louisville Medical Department, 1889; for forty years a citizen and physician of Cave City, Ky.; died at his home in that city, July 9, from heart failure, aged 73.

Madison Eugene Boynton, M.D. University of Michigan, Ann Arbor, 1872; for many years a practitioner of Clinton, N. Y.; died at the home of his nephew in Bridgewater, N. Y., May 6, from pneumonia, aged 70.

Francis Floyd Feather, M.D. Starling Medical College, Columbus, 1892; for many years one of the best known citizens of Sandy Lake, Pa.; died at his home in that city, July 9, aged 54.

Arthur H. Pellette, M.D. New York Homeopathic Medical College, 1880; a member of the Medical Society of the State of New York; died at his home in Whitney Point, N. Y., July 6.

Craven Jackson, M.D. Jefferson Medical College, 1868; a member of the American Medical Association; died at his home in Los Angeles, Cal., July 2, from heart disease, aged 69.

John K. Thorne, M.D. Albany Medical College, 1871; for forty years a practitioner of Gloversville and Fulton County; died at his home in Gloversville, July 7, aged 70.

Miles J. O'Reilly, M.D. Albany Medical College, 1874; of Fishkille Landing, N. Y.; died of pneumonia in the Newburg Hospital, July 11, aged 60.

Ira W. Clark, M.D. Eclectic Medical College, Cincinnati, 1880; died at his home in Winfield, Kan., July 10, from typhoid fever, aged 55.

Peter J. Keiser, M.D. Geneva (N. Y.) Medical College, 1866; died at his home in Tamaqua, Pa., July 1, aged 69.

The Propaganda for Reform

IN THIS DEPARTMENT APPEAR REPORTS OF THE COUNCIL ON PHARMACY AND CHEMISTRY AND OF THE ASSOCIATION LABORATORY, TOGETHER WITH OTHER MATTER TENDING TO AID INTELLIGENT PRESCRIBING AND TO OPPOSE MEDICAL FRAUD ON THE PUBLIC AND ON THE PROFESSION

A GERMAN COUNCIL ON PHARMACY AND CHEMISTRY

Our German confrères have finally come to recognize the evil connected with the proprietary-medicine business and the extent to which this is a detriment to the progress of medicine. This in no small way has been brought about by the reports of the Council on Pharmacy and Chemistry and by THE JOURNAL'S propaganda. Largely through the efforts of Dr. Heubner, editor of the *Therapeutische Monatshefte* and professor of pharmacology at the University of Göttingen, this appreciation for the need of reform has finally culminated in the establishment of a German Council on Pharmacy and Chemistry to be known as "Die Arzneimittelkommission des Kongresses für innere Medizin." This commission or council has made a preliminary report, as noted in our Berlin Letter in THE JOURNAL, May 25, 1912, p. 1613, and in the Current Medical Literature Department, June 22, 1912, p. 2006. The "commission" has prepared a set of rules or principles, according to which remedies improperly advertised shall be excluded from a list of acceptable proprietaries which is to be published. The following are the rules adopted:

No article will be accepted for inclusion in the list of the congress (1) the composition of which is secret. In this sense, "composition" means for simple chemical substances, the scientific name, the empiric formula, and so far as known, the structural formula; for mixtures the amount of each different constituent in a definite amount of the commercial product; (2) for which misleading claims are made in the advertisements regarding its origin, preparation, composition and tests for identification; (3) which shows essential differences in composition in different commercial samples (by an essential difference is meant marked variation in appearance, taste, absorbability, or the quality or quantity of action); (4) which is a mixture of well-known substances bearing a new name, although it shows no essential difference from some already well-known mixture; (5) for the curative value or innocuousness of which, unwarranted and misleading claims are made in the advertisements; (6) the exploitation of which is contrary to the true interests of the patients.

A comparison of these rules with the ten rules of the A. M. A. Council on Pharmacy and Chemistry shows a close agreement. While the German council makes no direct prohibition regarding the exploitation of proprietary medicines to the public, nor makes any provision regarding the proper nomenclature of remedies, yet this is covered by their rule six, for it is to protect the public that our Council objects to the exploitation of proprietary remedies by means of direct advertisements to the public or by means of circulars or labels inclosed with the trade package, or by names which in themselves appeal to the public.

The commission has collected from twenty-one of the most widely circulated German and Austrian medical journals about 1,000 advertisements of remedies for the year 1911, and after a careful investigation has arranged them in three lists. The first list includes remedies, the method of advertisement of which complies with the foregoing rules (positive list). The second list includes remedies the advertisements of which do not comply with the established rules (negative list). The third list includes remedies regarding which it seems to the commission impossible to form an opinion as to whether their advertisements comply with the rules without thorough investigation (doubtful list).

We understand that this report and list are to be placed in the hands of the members of the representative German Medical Association (the Vereinsbund), and hope that eventually the findings of this commission will receive the same recognition in Germany that the reports of the A. M. A. Council on Pharmacy and Chemistry are receiving in this country. The German commission is proceeding in much the same way as the Council on Pharmacy and Chemistry began its work, and it must be remembered that the present rules and the work done are preliminary. It is evident that the commission has arrived at its decision by an examination of the advertising in the medical journals, with little reference so far to other methods of exploitation which may be employed, and hence its further reports will be looked forward to with interest.

THE PHYSICIAN AND DRUG STANDARDS

Originally founded by physicians, the Pharmacopeia was intended as a collection of valuable drugs, prepared by an approved standard of methods, to be used by physicians. Soon, however, the pharmacist became prominent and then dominant in its preparation, and the character of the work was changed from a list of good drugs for the practicing physician to a standard of all drugs, adopted as official by the members of the Pharmacopeial Convention, dominated by the pharmacists. It was no longer a list of what the physician wanted, but a collection of all drugs which the pharmacists thought should be included. In other words, it was assuming the character of a book of standards. In the succeeding conventions the same question arose. The physician desired that the Pharmacopeia contain only such drugs as were found to be valuable in practical use, while the pharmacist wished to include all of the new drugs that seemed to him of commercial importance.

The Council on Pharmacy and Chemistry has always contended, and THE JOURNAL agrees with the contention, that the Pharmacopeia should contain only good drugs of practical use to the physician. This idea has grown, and a long list of useless drugs was submitted by the Council on Pharmacy and Chemistry and various teaching physicians to the convention for elimination from the Pharmacopeia. Just how far the committee will go in the elimination of these drugs is not known, but present appearances indicate that the wishes of physicians in the matter will be practically ignored.

H. P. Hynson,[1] a pharmacist, in a recent address advocated the preparation of four books having to do with drug standards. First, the Pharmacopeia, should be the official standard of all drugs and should have absolutely nothing to do with therapeutics. It should not be a text-book, but should remain a book of reference and a legalized authority as to standards of identity and strength for use of pharmacists. The second should serve as a repository for formulas of all kinds and should be a legal standard for these formulas. The third book suggested by Hynson should contain a list of drugs of medicinal value, which should be the work of the medical profession and the property of the American Medical Association. The fourth book should be a book of pharmaceutic preparations, made up from the list of drugs contained in the third book referred to and should be published by the pharmacists. Something has already been done toward preparing the third book before referred to in the list of drugs compiled by the Council on Pharmacy and Chemistry, with the cooperation of teachers of therapeutics and materia medica and state board examiners. There has long been a demand for such a book by medical teachers and state board examiners, and it is quite probable that one will soon be announced by a committee created for the purpose by the Council.

The scheme proposed by Hynson is interesting, but it does not seem wholly necessary. It is a recognition, however, of the fact that the two present standards, the Pharmacopeia and the National Formulary, do not fulfil the practical requirements of practicing physicians, teachers and examining boards. It is believed that the proposed book of useful medicines will answer the purpose of the third and fourth books proposed by Hynson. While we still believe that the Pharmacopeia should contain only those preparations which the medical profession considers of value, it is quite evident that for the present, at least, the Pharmacopeia will not be of this character.

1. Bull. Med. and Chir. Faculty of Maryland, March, 1912, p. 152.

Association News

AMERICAN MEDICAL ASSOCIATION MEMBERSHIP[1]

At the Atlantic City session, the Board of Trustees announced that it had "modified the records of the membership and subscription departments so that these are now satisfactory to the Post-Office Department relative to second-class rates." This places the Association in position to transfer from the subscription list of THE JOURNAL to the membership roll of the Association those subscribers who can qualify as members. This work has been begun and about five hundred names have been added to the membership roll of the Association since the Atlantic City session. We want to add to the membership roll the name of every subscriber who (1) holds membership in the component society where he is engaged in practice, which includes affiliation with his constituent state association; (2) files a formal application for membership (the prescribed form will be printed from time to time in the advertising pages of THE JOURNAL); and (3) pays his dues to the Association for the current year—an amount equal to his subscription to January, 1913.

Undoubtedly, many are under the impression that they are members, but are on our lists merely as subscribers. Those who are in doubt can determine how they are entered by looking at the address tag on the wrapper of THE JOURNAL. A membership tag contains no date line while the tag used for subscribers indicates the date of expiration of the subscription.

Correspondence

Romanowsky Stain for Entamebas

To the Editor:—I wish to call attention to a method of differentiating the various modifications of the Romanowsky stains, by means of which not only may very beautiful preparations be obtained, but far more accurate knowledge gained of the structure of the nucleus of protozoa. I have been using the method for several months in the study of the common if not the sole pathogenic entameba of this region—*Entamœba tetragena*. Smears are stained first with Leishman's, Wright's or Hastings' stain, and if, on inspection, a smear contains a sufficient number of entamebas for further study, it is then stained by Giemsa's stain until the film has a purple cast. It is then plunged into 60 per cent. alcohol, to which 10 to 20 drops of aqua ammoniæ have been added. The slide is kept in motion and examined from time to time, with either the high-dry or water immersion lens, until the desired differentiation is obtained, when the film will be seen to have a violet color.

The cytoplasm of entamebas is stained various shades of blue, the idiochromidia navy blue, and the nucleus presents an appearance quite different from the usual descriptions based on Romanowsky preparations stained in other ways without differentiating. The nucleus stains rather faintly blue and is seen to be made up of a mass of very slightly refractile globules, which are more evident in some preparations than in others, surrounded by a pale blue halo. Within this nucleus a variable amount of purple-staining substance is seen. This substance, which is usually called the nucleus, but which represents only a portion of the nucleus, presents a varied appearance, sometimes as a ring (karyosome), sometimes as a reticulum, occasionally as fine granules.

By means of this method many of the errors of interpretation, due to the use of other non-differentiating staining methods, are avoided. Bodies which have been mistaken for nuclei and chromidia resolve themselves into more or less defunct erythrocytes, bacteria or white cells. Old dry-stained smears which have been overstained or are otherwise unsatisfactory may be recovered by differentiating with the ammoniated alcohol. The amount of ammonia used may be slightly increased with very thick films, or the action prolonged. With thin films the amount of ammonia must be diminished and the action shortened. A number of specimens which had been well stained but not differentiated, and in which it was thought developmental phases of *E. histolytica* could be detected, were seen to resolve themselves into *E. tetragena* on differentiation with ammoniated alcohol. No protozoologist would think of studying protozoa by means of undifferentiated hematoxylin preparations, and as the Romanowsky stains overstain almost equally well, they should similarly be differentiated. The method is recommended for the differentiation of all classes of polychrome-methylene-eosin-blue stains.

SAMUEL T. DARLING, Ancon, C. Z.

1. See also Editorial, this issue.

Menstruation After Complete Double Oophorectomy

To the Editor:—I notice in the proceedings of the American Gynecological Society (THE JOURNAL, July 6, p. 57) the discussion of the phenomenon of "menstruation without ovaries." At this meeting Dr. Findley reports a case of double complete ovariotomy, the patient nevertheless menstruating every twenty-eight days for a year and a half. He reopened the abdomen for other purposes but was unable to find any trace of ovarian tissue. Seven months after the second operation the patient was still menstruating as regularly as before.

Now, if a physician has dark hair and desires a beautiful iron gray to develop in the course of a year, just let him remove both ovaries, having first told the woman that she will never be worried again with menstruation. I have three such patients, and while I am completely cured, those three women have a worse complaint than ever, so far as the menstrual habit is concerned. My last patient presents a history almost identical with the one reported by Dr. Findley. On reopening the abdomen, which I did on account of distressing pain from adhesions, I found that the omentum adhered to the anterior abdominal wall, and also to the left tube and broad ligament. The omentum I released and resected, but the patient still menstruates, although the ovaries including their ligaments were completely removed. I do not know what I might find in the pelves of the other two.

In reviewing the literature of the last ten years I find in THE JOURNAL, Feb. 9, 1907, p. 519, a communication from Dr. Earl Harlan, Cincinnati, in which he reports a case of vicarious menstruation relieved by double oöphorectomy. He concludes that the stimulus which produces menstruation originates in the ovary; that it is the primary organ of menstruation, etc.

In the *Journal of the Missouri State Medical Association*, October, 1907, Dr. W. B. Dorsett, St. Louis, says that the hilum of the ovary can perform the function of that organ.

Grünbaum, in the *Deutsche medizinische Wochenschrift*, 1907, xxxiii, cites a number of cases of lactation following ovariotomy and even panhysterectomy.

Dr. Noble, Guthrie, Okla., in *Oklahoma State Medical Journal*, January, 1910, reports finding a supernumerary ovary.

Dr. W. W. Chipman, Montreal, at the meeting of the American Gynecological Society, Atlantic City, May, 1911, said that the ovarian ligament frequently contains parenchymatous tissue; that it is generally believed that the ovary has the power to regenerate after its partial removal.

I have searched diligently all the way back to 1902 and am here presenting practically all that has been determined of the relation of the ovary to menstruation.

S. H. LANDRUM, M.D., Altus, Okla.

The Prognosis of Low Hemoglobin Content

To the Editor:—I have somewhat tardily noticed the inquiry of Dr. Barron (THE JOURNAL, March 23, 1912, p. 880) regarding the possibility of recovery of patients whose blood shows 10 per cent. or less hemoglobin; and the value of the Tallqvist hemoglobin scale-book.

In the work of the Commission for the Study of Anemia in Porto Rico, patients were not infrequently encountered showing 10 per cent. or less hemoglobin, and recovery usually followed the expulsion of their parasites—the *Necator americanus*, the so-called hookworm. Several such cases were reported by Ashford and King (A Study of Uncinariasis in Porto Rico, *Am. Med.*, v. 6, (10 and 11) Sept. 5 and 12, 1903, pp. 391-396 and

431-438), and in the report of the above commission, "Anemia in Porto Rico," Dec. 1, 1904.

We used the von Fleischl hemoglobinometer in our routine estimations of hemoglobin, but also compared several other instruments with it, including the Tallqvist scale. We found that the Tallqvist scale, while not as accurate as some other methods, was sufficiently so for clinical use.

W. W. KING,
Passed Assistant Surgeon, U. S. P. H. & M.-H. S., and Member of the Anemia Commission.

Party Platforms and National Health Service

To the Editor:—I read in the issue of July 13 (p. 126), the editorial entitled "Party Platforms and National Health Service." Will it be out of place to call your attention to the plank in the Socialist party platform, adopted at Indianapolis in May, relative to this very thing? The Socialist party must, therefore, be given credit for taking this advanced stand.

The plank referred to is No. 13 and reads: "The enactment of further measures for the conservation of health. The creation of an independent bureau of health, with such restrictions as will secure full liberty to all schools of practice."

E. C. STUCKE, M.D., Garrison, N. Dak.

A Texas Endorsement of the Conclusions of the Committee on Anesthesia

To the Editor:—Apropos of Dr. T. J. Turpin's criticism of the conclusions of the Committee on Anesthesia (THE JOURNAL, July 13, 1912, p. 135), he is at least ten years behind the times. For the past twelve years ether has been the routine anesthetic for all major work, and this, too, in a region of some altitude (4,000 feet), where chloroform was once supposed to be the anesthetic of choice. The same applies to all the larger Texas cities.

B. F. STEVENS, El Paso, Texas.

Queries and Minor Notes

ANONYMOUS COMMUNICATIONS will not be noticed. Every letter must contain the writer's name and address, but these will be omitted, on request.

TREATMENT OF FALLING OF THE HAIR

To the Editor:—Many women complain of their hair "coming out," "getting thin," etc. Is there any thing that will actually cause an increase in the growth of the hair? Kindly let me know through your query columns.

L. W. P.

ANSWER.—Falling of the hair is a frequent result of various infections like typhoid, syphilis, etc. In these cases it must be attributed to the influence of some poison circulating in the blood. Analogy would lead us to refer a certain number of cases to auto-intoxication, presumably from intestinal putrefaction but occasionally from deficient elimination of poisons normally present in the body in small quantity, but which when they accumulate exercise an unfavorable influence on nutrition.

Local causes may also act by affecting the circulation of the scalp or there may be actual disease of the hair itself. A common cause, interfering with the circulation of the scalp and with the growth of the hair, is the wearing of tight hats. Failure to brush the hair and to keep up a proper stimulation of the scalp may be responsible for the falling of the hair. The most common local disease leading to a loss of hair is seborrhea.

The treatment should include attention to the general health with a view to removing auto-intoxication by diet (chiefly carbohydrate, the use of buttermilk, etc.), removal of constipation, and the stimulation of the kidneys if needed. Locally, care should be taken to promote the hygiene of the scalp. For this purpose massage may be practiced by the fingers, once or twice daily, in such a manner as to stimulate the circulation. In the case of women, the wearing of artificial hair should be interdicted. The scalp should be rubbed daily with a hair-brush so as to stimulate gently without wounding or irritation. Local treatment includes the cleansing of the scalp by shampooing every few days, following the shampoo by some soothing application, such as lanolin, petrolatum or equal parts of lanolin, glycerin and rose water. In obstinate cases the nail brush may be used over insensitive parts of the scalp in shampooing. A tincture of green soap with 10 to 20 grains (0.65 to 1.35 gm.) of resorcin to the ounce (30 c.c.) is recommended for use as a soap in shampooing. In addition to the shampooing, lotions or ointments, calculated to excite a mild hyperemia should be used. The following formulas have been recommended:

℞.	gm. or c.c.	
Tincture of cantharides	aa 15-30	ʒiv-ʒi
Tincture of capsicum		
Alcohol	250	Oi

Mix.

℞		
Liquor formaldehydi	5-15	ʒi-iv
Alcoholis	250	Oi

M.

℞		
Corrosive sublimate	0.5-1	gr. viiss-xv
Alcohol	250	Oi

Mix.

℞.	gm. or c.c.	
Hydrarg. bichlorid.	20	gr. iij
Tinct. cantharid.	15	ʒss
Ol. amygdal. dulc.	4	ʒj
Spts. rosmarin.	30	ʒj
Spts. vini rect.	60	ʒij
Aq. destill.	q.s.ad 180	q.s.ad ℥vj

M.

℞.	gm. or c.c.	
Hydrarg. chlorid. mit.	5 33	℈iv
Hydrarg. ammon.	2 66	℈ij
Petrolati	ad 30	ʒj

M.

℞.	gm. or c.c.	
Resorcin.	4	ʒj
Quininæ (alkaloid)	1	gr. xv
Ol. ricini	0 66-2	♏ x-xxx
Alcoholis	ad 128	ad ℥iv

M.

VASECTOMY

To the Editor:—A number of times recently I have seen references in the various medical journals regarding the operation of vasectomy and vasotomy for the purpose of sterilizing criminals, idiots, syphilitics and various other defectives. Please give me the literature on this operation, and also a brief technic.

DR. B., Missouri.

ANSWER.—A brief description of the technic of vasectomy was given in THE JOURNAL, Sept. 30, 1911, p. 1152, together with a short bibliography. In addition to the references then given the following may be added:

Marshall, F. B.: Vasostomy and Vasectomy in Acute and Gonorrheal Vesiculitis and Epididymitis, *Jour. Michigan State Med. Soc.*, July, 1910.

Swinburne, G. K.: Anastomosis of the Vas: Time Following Operation Necessary for Successful Issue, *Am. Jour. Urol.*, July, 1910.

Schmidt, L. E., and Kretschmer, H. L.: Diagnostic Possibilities of Skiagraphy of the Vas Deferens, *Surg., Gynec. and Obst.*, October, 1910.

Hoag, J. C.: Relation of Vasectomy to Eugenics, *Ill. Med. Jour.*, March, 1911, and *Chicago Med. Recorder*, January, 1911.

Preston, C. H.: Vasectomy: Its Ethical and Sanitary Limitations, *West Virginia Med. Jour.*, July, 1910.

Barrow, B.: Vasectomy for the Defective Negro with His Consent, *Virginia Med. Semi-Month.*, Aug. 26, 1910.

Bloss, J. H.: Sterilization of Confirmed Criminals and Other Defectives, *West Virginia Med. Jour.*, March, 1910.

Muren, G. M.: Transplantation of Vas Deferens for Sterility in Men, *Long Island Med. Jour.*, December, 1911.

Nolan, M. J.: Proposed Sterilization of the Mentally Unfit, *Med. Press and Circular*, Feb. 7, 1912; *Dublin Jour. Med. Sc.*, March, 1912; abst. in THE JOURNAL, March 16, 1912, p. 819.

Juliusberger, O.: Sterilization of the Unfit, *Deutsch. med. Wchnschr.*, Feb. 29, 1912.

Bogart, G. H.: Sterilization of the Unfit, *Denver Med. Times*, May, 1912.

Bell, C.: Hereditary Criminality and Asexualization of Criminals, *Denver Med. Times*, April, 1912.

ADMINISTRATION OF TYPHOID VACCINE

To the Editor:—Please describe the technic of administration of typhoid vaccine. What is the best preparation?

G. E. KNAPPENBERGER, M.D., Macomb, Ill.

ANSWER.—During the past two years we have published a number of articles on vaccine for typhoid fever. Several of them described the technic of administration in full. The technic is briefly as follows: The skin of the arm, at the insertion of the deltoid, after thorough cleansing, is disinfected, usually by the application of tincture of iodin. The suspension of typhoid bacilli constituting the vaccine is then drawn up into a sterile hypodermic syringe, and injected beneath the skin where the tincture of iodin has been applied. The wound made by the syringe is covered with a drop of collodion. The number of bacilli usually injected at the first dose is 500,000,000. The second inoculation is made from ten to twelve

days later, at which time from 500,000,000 to 1,000,000,000 organisms are injected. Some authors advise a third injection of 1,000,000,000 killed bacilli.

The reader should consult the references given for a description of the reaction which may vary from slight malaise to a considerable degree of fever. The essential point in the administration of this vaccine is strict cleanliness and asepsis.

Preparations of typhoid vaccine for preventive inoculations are made by several of the firms which produce serums and vaccines. The vaccine used by the army surgeons is produced by the laboratory of the Army Medical School, from a single strain of the bacillus. Several of the manufacturers of vaccine advertise that they are using the same strain as is used by the surgeons of the United States Army. Typhoid vaccine is described in N. N. R., 1912, p. 214. The following preparations have been accepted: Typho-Bacterin Immunizing (H. K. Mulford Co.); Typhoid Vaccine Prophylactic (Parke, Davis & Co.); Typhoid Bacillus Vaccine (G. H. Sherman, Detroit). The following articles may be referred to:

Davis, D. J.: Antityphoid Vaccination, THE JOURNAL, Feb. 24, 1912, p. 537.
Kean, J. R.: Sanitary Record of the Maneuver Division, THE JOURNAL, Aug. 26, 1911, p. 713.
Nelson, K. and Hall, W. E.: A Rapid Method of Inoculation Against Typhoid, THE JOURNAL, Nov. 25, 1911, p. 1759.
Phalen, J. M.: Vaccine Inoculation, Prophylactic and Curative, of Typhoid, THE JOURNAL, Jan. 6, 1912, p. 9.
Russell, F. F.: Results of Antityphoid Vaccination in the Army in 1911, and Its Suitability for Use in Civil Communities, THE JOURNAL, May 4 1912, p. 1331.
Maverick, A.: Typhoid Vaccination and the Widal Reaction, THE JOURNAL, June 1, 1912, p. 1672.

PHYSIOLOGIC ACTIONS OF COLD AND HEAT

To the Editor:—What is the difference, if any, between the effects of cold and heat applied to a part of the body?

G. N. BRAZEAU, M.D., Racine, Wis.

ANSWER.—The temporary application of cold to a part of the body produces a contraction of the peripheral blood-vessels, which is followed in a vigorous individual by a reaction which causes a dilatation of the vessels, and a freer flow of blood through the part. A similar application of heat causes the dilatation of the blood-vessels without the preliminary contraction. The hot application is, therefore, less stimulating to the nervous system than the cold.

Too long an application of cold causes a paralysis of the cutaneous muscles with a passive dilatation of the vessels, resulting in a passive congestion, but an actual hindrance to the passage of blood through the part.

A prolonged application of heat results in a similar paralysis of the blood-vessels.

The general effect of cold is that the heart is stimulated to an increased effort to maintain an active circulation, and as long as the resistance to the cold is effective and the peripheral circulation is maintained, a general tonic effect is produced.

The general effect of heat is quite different. If the temperature is above 104 F., a slight initial stimulation of the blood-vessels may occur, but this is followed by dilatation with steadily falling blood-pressure. This results in rapid beating of the heart in its effort to maintain the pressure at its proper level. The general temperature of the interior rises, the vessels of the abdomen may dilate and the fall of blood-pressure may be so great as further to weaken the heart, leading to cerebral anemia, vertigo, faintness, etc.

PRESCRIPTION FOR TREATMENT OF ALCOHOLISM

To the Editor:—The June number of the *Century* contains an article entitled "Help for the Hard Drinker," by Charles B. Towns, in which the author refers to a prescription which he gave to the profession through Dr. Alexander Lambert of New York, and which he states was published in THE JOURNAL. If possible, please republish the prescription in your "Query" column.

H. S. CUMMING, M.D., Fort Monroe, Va.

ANSWER.—Full details of Dr. Lambert's treatment of the alcohol and drug habits were given in his articles printed in THE JOURNAL, Sept. 25, 1909, and Feb. 18, 1911. From the latter we quote the following on the treatment of alcohol addiction. The belladonna mixture referred to is as follows:

℞	Gm. or c.c.		
Tincturæ belladonnæ	62		ʒii
Fluidextracti xanthoxyli		or	
Fluidextracti hyoscyami	aa 31		ʒi

To an alcoholic, the belladonna mixture, five compound cathartic pills and 5 grains of blue mass are given simultaneously at the first dose. The belladonna mixture is continued every hour of the day and every hour of the night the same as with morphin patients, and twelve hours after the initial dose patients are again given from three to five C. C. pills, and at the twenty-fourth hour after the initial dose, they are again given the cathartics followed by salines if necessary, and again at the thirty-sixth hour. After these last cathartics, bilious stools will appear, and by the forty-fourth or forty-fifth hour the castor oil is given. Sometimes it is necessary to carry on the treatment over another period, and the c.c. pills and blue mass are again given at the forty-eighth hour, which would bring the end of the treatment about the sixtieth hour. Elderly or very nervous patients who have been on a prolonged debauch are tapered off with 2 ounces of whisky for four or five doses through the first twenty-four hours. If the patients are excessively nervous it is necessary also to see that they sleep, and the mixture of chloral hydrate, gr. xx, morphin, gr. ⅛, tincture of hyoscyamus, dram ½, ginger, m.x, and capsicum, m.v, water, ½ ounce, which was recommended before is the best hypnotic for them. These patients should also have cardiac stimulants such as strychnin and digitalis after the first twenty-four hours, sooner if they are weak. If the patient has an alcoholic gastritis and cannot retain medicine, it is wise to give him 5 grains of Tully's powder (pulvis morphinæ compositus) with 5 grains of sodium bicarbonate about every two hours for two or three doses, as this seems to be the most effective method of allaying the vomiting of an alcoholic gastritis.

Other details of the management of the patient during the treatment will suggest themselves to the physician as symptoms arise.

EFFECT OF SUDDEN CHANGE IN ALTITUDE

To the Editor:—What would be the effect on the blood-pressure were one to travel from Moyie, B. C., which has an altitude of 3,044 feet, to Bonner's Ferry, Ida., which has an altitude of 1,773 feet? The train makes this distance in two hours. A week ago a man with Bright's disease died on the train in an instant after having made the above trip. Death took place near Bonner's Ferry. Would this sudden change in altitude have a tendency to raise the blood-pressure?

LESLIE J. STAUFFER, M.D., Bonner's Ferry, Ida.

ANSWER.—There probably would be no effect on the blood-pressure. The change in altitude was slight, and the coming from a high to a low altitude, even if the difference were much greater than that mentioned here, would not result in serious consequences. Therefore, the probability is that there was no relation between the man's death and the change. It is likely that death was due to some other cause, possibly to cardiac failure as a result of exertion on the trip, or to a hemorrhage.

A MISPLACED HEADING IN THE CURRENT MEDICAL LITERATURE DEPARTMENT

To the Editor:—THE JOURNAL refers, on page 1155 (April 13, 1912), to an article by Heitz-Boyer, but it does not give the correct reference. The article is listed as among the contents of the *Lyon Chirurgical* for March. The other articles mentioned are found in the stated number of the *Lyon Chirurgical*, but the article by Boyer is neither in this nor in the preceding or following numbers of the periodical.

ARTHUR H. CURTIS, Chicago.

ANSWER.—Many thanks for calling our attention to this blunder. A correction was published at the close of the Current Literature Department, last week. The mistake is that the name, *Lyon Chirurgical*, slipped in one title too high. The Boyer article belongs to the journal listed just above, the *Journal d'Urologie Méd. et Chirurgicale*, the new name for the old *Annales des Maladies des Organes Génito-Urinaires*.

THE METRIC SYSTEM IN PRESCRIPTION WRITING

To the Editor:—The communication (THE JOURNAL, June 15, p. 1874) entitled "The Metric System in Prescription Writing," contains an error in arithmetic. The first prescription, calling for 1 grain of sodium bromid to the teaspoonful, is correct, as the proportion of medicament to menstruum is as 1 to 60; but in the second prescription in which the dose of the salt is intended to be 2 (or 5) grains, the solid ingredient alone should be increased in quantity, while the amount of water should remain the same, i. e., 60 c.c.

GEORGE MINGES, Dubuque, Iowa.

ANSWER.—Our correspondent is correct. We are much obliged to him for calling our attention to the oversight.

IS BOILED WATER INJURIOUS?

To the Editor:—Is a long and continuous drinking of boiled water injurious? If so, in what way?

A. M. STAMPS, M.D., Seguin, Tex.

ANSWER.—No, the water will still contain enough salts, so that it is different from distilled water, and we see no reason why it should be injurious.

Medical Economics

THIS DEPARTMENT EMBODIES THE SUBJECTS OF POST-GRADUATE WORK, CONTRACT PRACTICE, LEGISLATION, MEDICAL DEFENSE, AND OTHER MEDICOLEGAL AND ECONOMIC QUESTIONS OF INTEREST TO PHYSICIANS

SOCIAL REFORMS IN TERRE HAUTE

In the *Survey* for June 20 appears a report of the social hygiene campaign which has been carried on in Terre Haute, Ind., under the leadership of the Vigo County Medical Society. This report is reprinted, in part, as a suggestion to other county societies. What has been done in Terre Haute can be done elsewhere, if our county societies will take the lead and will secure the help of the women's clubs and social organizations. The following report of work done and conditions changing in a whole city in a few months should be read and carefully considered:

"About the middle of January, a year ago, the *Survey* was given to a number of the leading physicians, who after reading Mr. Finn's articles, said the Vigo County Medical Society would thoroughly approve a social hygiene movement in Terre Haute. A few days later, the social workers were invited to attend the next regular meeting of the society when an opportunity would be given to ask formally for its endorsement and cooperation. This was done and before the week was over, the secretary of the society, Dr. B. V. Caffee, arranged for a joint meeting with the social workers, February 14, to discuss the following program on sex hygiene:

"1. Necessity of instruction.

"2. Good results possible.

"3. Progress in public sentiment.

"4. Means of instruction.

NEGLECTED!

"The first and last subjects were assigned to physicians, the second and third to women, one of whom, Rebecca Torner, was a teacher in the high school. There was so much discussion of the first three topics that for lack of time the fourth could not be considered, and the meeting ended with a resolution that the medical society appoint a committee to work with committees of other organizations for an educational campaign.

"By May 1 a citizens' committee had been formed, consisting of the president, secretary and five or more board members of the following organizations: Society for Organizing Charities, Crittenton Mission, Vigo County Medical Society, Y. W. C. A., Council of Jewish Women, Social Settlement, Light House Mission, Civic League, Boys' Federated Club, Men's Club of the Episcopal Church, Congregational Church Club, Y. M. C. A., Board of Children's Guardians, Ministerial Association and the Women's Council, a federation of about thirty women's clubs.

"May 5 a meeting of this committee was called and Dr. J. H. Weinstein's paper on The Means of Instruction in Social Hygiene, unread at the meeting of medical society and social workers, was the basis of an earnest discussion by the men and women of other professions and callings, who were found to hold widely differing views concerning segregation, the physical necessity for vice districts and venereal diseases. Chicago's vice commission's report had just been made and its findings gave additional emphasis to the necessity of education. This citizen's meeting appointed a committee consisting of the secretary of the Y. M. C. A., Will A. House; the secretary of the Y. W. C. A., Miss Moore, and the officers of the Woman's Council, Mrs. U. O. Cox, Mrs. Adolph Joseph, A. Jeannette Smith and Mrs. Joseph Diekemper, to arrange, if possible, for a series of talks in the fall by Dr. Winfield Scott Hall, of the Northwestern University Medical College. The Woman's Council was asked to finance the campaign. When Dr. Hall arrived in October, he found the heaviest schedule ever assigned him, but he was equal to it; and when he left after making, with automobile help, seventeen addresses in three days, Terre Haute was not just the same place, for it was true as one of its best business men said two weeks later, 'Dr. Hall made a most profound impression upon this city.'

"All the meetings were largely attended, the secretaries of the Y. W. C. A. bringing together the largest audience when Dr. Hall addressed more business girls and women, he said, than he ever met before at one time. The social workers within a week observed good results from this meeting.

"The supper conference of the citizens' committee of a hundred of the representative men and women of the city around a great table in the Y. W. C. A. dining-room was probably the most unusual feature of the program. Rabbi Leipziger asked the blessing, and after an hour and a half's enjoyment of the supper, Judge Charles S. Batt, of the city court, introduced Dr. Hall, who gave in his quiet, scholarly, forceful, convincing way, a message that certainly did 'appeal to all that is noble and best in man and woman.' Everybody realized, as perhaps never before, what motherhood meant. Many people who could not attend the meetings were reached by the city press which had been wisely helpful from the first. The papers gave fully and accurately Dr. Hall's very words, and they were read by hundreds of people in the neighboring towns.

"Social hygiene education will be continued through the parent-teacher clubs and social centers of the schools, the physical culture departments of the Y. M. C. A., Boys' Club, Y. W. C. A., and the State Normal School, and through recently organized social service committees of existing organizations."

THREE HUNDRED YEARS BEHIND THE TIMES

"That peculiar outfit of quacks, nostrum-venders, prayer-peddlers, ill-meaning schemers and well-meaning cranks called the League for Medical Freedom—in which our own Works is a burning and shining light—is bitterly opposed to medical inspection and to the teaching of the germ theory of infection in the public schools.

"These people should have lived three hundred years ago. There was no medical science then, no knowledge of the process of growth in plant or animal, no knowledge of the functions of the human organs, no knowledge of therapy, anesthetics, antiseptics, sanitation or hygiene. Any cunning charlatan could peddle elixirs, charms, nostrums.

"As a result of this entire freedom from medical interference and absence of pestiferous medical teaching and inspection, our ancestors had the inestimable privilege of dying like poisoned rats whenever the small-pox or pestilential fevers broke out in any community, and the capitals of the civilized world were decimated at regular and not infrequent intervals.

"Plagues, such as modern medical science has made unknown, ravaged whole kingdoms and slew thousands by day and by night, until the living were too few to bury the dead, and made veritable those hideous narratives which hold one's horrified eyes glued fast to the pages of Pepys and Defoe.

"How any human being able to read and to compare the history of medical ignorance and its awful results in the past and of medical knowledge and its wonderful, beneficent results in our times can deliberately set himself to oppose the spread of that knowledge and the extension of that noble teaching and practice is beyond the comprehension of normal reason.

"Nothing can be more certain than that if we were to be deprived of all sanitary, hygienic, surgical and therapeutic precautions and remedies which scientific medical men have given us—often at the heroic sacrifice of their own intrepid lives—the whole structure of modern civilization would fall to pieces, and where now millions of people dwell in health and security the terrible angels of fever and pestilence would, at awful intervals, fill the streets with mourning, the houses with the dying and the cemeteries with the loathsome and infectious corpses of the thousands of the dead.

"It fills one with indignation to hear men and women who should have more sense denouncing, in spite of the testimony of all history and in spite of the evidence of their own eyes and ears, the magnificent and blessed achievements of the sciences of therapy and surgery and hygiene and sanitation, and actually advocating a return to the methods, the ignorance and the horrible conditions of 300 years ago. And the fact that a man misrepresenting California in the Senate house of the United States is the leader of such a wicked and senseless crusade against the public health and welfare adds to a natural indignation a still stronger feeling of infinite contempt and disgust."—San Francisco *Call*, July 18.

A Correction.—The article by Dr. A. H. Madry of Aurora, Mo., in this department July 6, was an abstract of a paper read before the Missouri State Medical Association and to be published in the *Journal of the Missouri State Medical Association*. This credit should have been given when the abstract appeared.

Medical Education and State Boards of Registration

COMING EXAMINATIONS

CALIFORNIA: San Francisco, August 6-9. Sec., Dr. Charles L. Tisdale, 929 Butler Building.

NEBRASKA: Capitol, Lincoln, August 14-15. Sec., Dr. C. P. Fall, Beatrice.

Georgia Homeopathic May Report

Dr. R. E. Hinman, secretary of the Homeopathic Board of Medical Examiners, reports the written examination held at Atlanta, May 8, 1912. The number of subjects examined in was 10; total number of questions asked, 100; percentage required to pass, 75. Only one candidate, a graduate of the Hering Medical College, Chicago, 1910, was examined, and he passed with a grade of 78. One candidate, a graduate of the Detroit Homeopathic College, 1911, was licensed through reciprocity with Michigan.

New Mexico April Report

Dr. J. A. Massie, secretary of the New Mexico Board of Health and Medical Examiners, reports the written and oral examination held at Santa Fe, April 8, 1912. The number of subjects examined in was 10; total number of questions asked, 100; percentage required to pass, 75. Thirty-one candidates were licensed on presentation of satisfactory credentials. The following colleges were represented:

LICENSED ON PRESENTATION OF SATISFACTORY CREDENTIALS

College	Year of Grad.
Yale Medical School	(1898)
George Washington University (1904)	(1911)
Hahnemann Medical College and Hospital, Chicago	(1895)
Northwestern University Medical School (1882)	(1883)
College of Physicians and Surgeons, Chicago	(1911)
Medical College of Indiana	(1890)
State University of Iowa, College of Medicine	(1897)
College of Physicians and Surgeons, Keokuk	(1896)
Hospital College of Medicine, Louisville	(1905)
University of Louisville (1893)	(1893)
College of Physicians and Surgeons, Baltimore (1882)	(1891)
University Medical College, Kansas City	(1909)
Washington University, St. Louis	(1886)
St. Louis College of Physicians and Surgeons	(1911)
John A. Creighton Medical College	(1902)
Cornell University Medical College	(1906)
Cleveland College of Physicians and Surgeons	(1899)
Jefferson Medical College (1897)	(1903)
Vanderbilt University	(1882)
University of Nashville	(1905)
University of Tennessee	(1892)
Memphis Hospital Medical College	(1898)*
University of Virginia	(1896)
Marquette University, Milwaukee	(1911)
Medical College of Mexico City	(1905)

* Passed written examination.

Book Notices

THE OCULAR MUSCLES. A Practical Handbook on the Muscular Anomalies oof the Eye. By Howard F. Hansell, A.M., M.D., Professor of Ophthalmology in the Jefferson Medical College, and Wendell Reber, M.D., Professor of Ophthalmology in the Medical Department of Temple University. Second Edition. Cloth. Price, $2.50 net. Pp. 223, with 85 illustrations. Philadelphia: P. Blakiston's Son & Co., 1912.

This manual has been regarded as one of the best text-books of its kind for the undergraduate student, if not for the embryo ophthalmologist. Consequently this second edition is welcomed, especially in its enlarged and improved form. The anatomy and physiology of the oculo-muscular apparatus is set forth clearly at length and illustrated, while the more important functional and organic anomalies are well described and discussed. As the work is intended for beginners it is, of course, quite proper for the authors to pin their faith to one procedure for the advancement of an ocular tendon, viz., the operation of Worth. While it may be agreed that if *one* method be selected that of Worth is the best for the general run of cases, yet the subject is of such great importance and there are so many excellent advancement methods of American origin—some of them particularly adapted to special cases—that two or three of these might well have been described and pictured. With this exception, however, the little handbook is well adapted to the purpose it has long served, as a reliable guide for the student of ophthalmic surgery.

THE NEW PHYSIOLOGY IN SURGICAL AND GENERAL PRACTICE. By A. Rendle Short, M.D., B.S., Senior Demonstrator of Pathology, University of Bristol. Cloth. Price, $2. Pp. 201. New York: William Wood & Co., 1911.

The day of guess-work in the practice of medicine is past. To practice this profession intelligently to-day, one must find a basis for what one does in the fundamental sciences which underlie the art. While the importance of physiology has long been recognized, its great value has never been so thoroughly appreciated as it is to-day, perhaps for the reason that during the past few years so many new facts of such great practical importance have been brought to light.

The newer physiology of the internal secretions, of the gastro-intestinal tract, of the vascular system and of the urinary organs, has added so much to our knowledge of the workings of the body in health and disease that the conditions which formerly were not even understood can now not only be satisfactorily explained but also can be treated with every assurance of success.

In this little volume of 200 pages the author has attempted to present this newer physiology, and, as he says, "to explain matters so simply that they may be intelligible to those having the most elementary knowledge of physiology." This task has been well performed and in addition to the facts of physi-

ology there will be found many very valuable therapeutic hints based on those facts. It is often hard to see one's idols shattered, even perhaps when one knows they are false. One of these shattered idols is the belief in the value of the nitrogenous enema. Careful analyses, however, show that the colon does not absorb nitrogenous foods, as the nitrogenous output in patients taking nutritive enemas follows almost identically the same curve as that in the fasting or starving person.

Many other interesting and instructive points of a similar nature will be found in this work.

ANNUAL REPORT OF THE BUREAU OF HEALTH FOR THE PHILIPPINE ISLANDS. By Carroll Fox, Acting Director of Health. Paper. Manila, 1911.

This is a well-written, well-printed and well-illustrated pamphlet of about 225 pages. In addition to statistical tables of births, marriages, deaths and diseases, the report contains a review of the work of the health bureau for the year and the provisions made for sanitation and combating diseases. It shows that the health bureau of the islands is well equipped, up to date and conducted by men experienced in sanitation and tropical diseases. The death-rate amounts to about thirty-three per thousand. Among the interesting facts revealed by the report, one is that the last case of plague in the islands originating locally occurred in April, 1906. Occasional imported cases are reported from time to time. Another interesting item is as to vaccination for small-pox which, while not universal, is carried on pretty thoroughly, with the effect of practically wiping out small-pox in the islands. The virus is manufactured under the control of the Philippine government. More than 10,000,000 people have been vaccinated in the islands without a single death occurring from it. This leads the director of health to say: "It is difficult to see how any observing medical man could question experience, evidence and science so far as to doubt the thoroughly established fact of the practical influence of vaccination on small-pox."

AN INTRODUCTION TO EXPERIMENTAL PSYCHOLOGY. By Charles S. Myers, M.D., Sc.D., Lecturer in Experimental Psychology in the University of Cambridge. Cambridge Manuals of Science and Literature. Cloth. Price, $0.40 net. Pp. 156. New York: G. P. Putnam's Sons, 1912.

This little volume of 156 pages contains a well-selected series of topics from researches in experimental psychology, presented in a manner to give the reader not only a general notion of the scope of this science, but also a comprehensive view of the special subjects treated therein. Each chapter, being complete in itself, can be read without reference to the others. The following subjects are discussed: (1) color vision; (2) touch, temperature and pain; (3) the Müller-Lyer illusion; (4) experimental esthetics; (5) memory; (6) mental tests and their uses. The most interesting chapters from our point of view are those dealing with memory, mental tests and touch, temperature and pain. This inexpensive little volume, replete with valuable information, may be conveniently carried in one's pocket and read while riding in the cars.

Medicolegal

Physician Not Agent to Bind Patient by Admissions

(Aldridge vs. Aetna Life Insurance Co. (N. Y.), 97 N. E. Rep. 399)

The Court of Appeals of New York was divided four to three on the power of a physician to bind the plaintiff by admissions in a letter after he had been requested to write to the defendant. The majority opinion says that the action was on an accident policy, under which the plaintiff claimed to be entitled to a specified weekly indemnity for injuries which caused appendicitis. It appeared in the case that, after the plaintiff had presented to the defendant the usual proofs of loss, the defendant's manager wrote to the plaintiff, stating that, "under the circumstances surrounding the case, it will be necessary for us to have further statistics or a statement from the attending physician. We wish him to advise us, over his own signature, on what dates he treated you for appendicitis previous to this accident which is claimed to have been sustained." This written request was taken by the plaintiff to his attending physician, whom he asked to write to the defendant in reply to the letter received from its manager. That was all that the plaintiff ever had to do with the letter written by the physician. The plaintiff did not see it or know its contents. It was not a letter dictated by the plaintiff, but one which he asked his physician to write in compliance with the demand made by the defendant. Then, was the letter written by the physician binding on the plaintiff, as though it had been written by himself? The court thinks the proper determination of that question obviously depends on the law of agency, for it can think of no principle on which the plaintiff could be charged with responsibility for the representations concerning his physical condition and treatment made by his attending physician, unless it be that he constituted the physician his agent by authorizing him to make the representations. But the court does not think that the plaintiff was bound in this case, first, because the particular statements in the letter were not written at his request, but rather on the demand of the defendant; and, second, for the reason that he did not see the letter or know its contents until it was produced in court. The defendant's request was not for a more comprehensive or specific statement of fact from the plaintiff, but "for further statistics" from the attending physician "over his own signature." The request was for information peculiarly within the knowledge of the attending physician, and for which he alone was to be held responsible. In these circumstances, the court thinks the physician could not be regarded as the agent of the plaintiff, and that he was rather an independent outsider for whose mistakes or misstatements the plaintiff could not be held responsible. As the physician undertook, however, on his oral cross-examination, to explain certain matters referred to in the letter, if it contained anything in the nature of an admission, it was competent against him, for the purpose of impeaching his testimony, even though it was not binding on the plaintiff.

Society Proceedings

COMING MEETINGS

American Academy of Ophthalmology and Oto-Laryngology, Niagara Falls,, August 20-22.
American Electro-Therapeutic Association, Richmond, Va., Sept. 3-5.
Medical Society of the Missouri Valley, Council Bluffs, Ia., Sept. 5-6.
Minnesota State Medical Association, Duluth, Aug. 14-15.
Nevada State Medical Association, Reno, Sept. 10-12.
New Mexico Medical Society, Roswell, Sept. 12-14.

AMERICAN SOCIETY OF TROPICAL MEDICINE

Ninth Annual Meeting, Held in Atlantic City, N. J., June 3, 1912

Officers Elected

The following were elected for the ensuing year: President, Dr. Edward R. Stitt, Washington, D. C.; vice-presidents, Dr. Richard P. Strong, Manila, P. I.; Dr. Creighton Wellman, New Orleans, La.; secretary, Dr. John M. Swan, Rochester, N. Y.; assistant secretary, Dr. Allen J. Smith, Philadelphia, Pa.; treasurer, Dr. C. Lincoln Furbush, Philadelphia, Pa.

The next annual meeting will be held in Washington, D. C., May, 1913.

The Eradication of Malaria

DR. JOSEPH H. WHITE, New Orleans: Malaria possesses a wider interest than any other of the tropical diseases in the United States, particularly in the South. There have, however, been countless deaths charged to malaria that do not belong to it. The morbidity of malaria, rather than the mortality, is the question that makes it of importance. The morbidity is not over-estimated, although the mortality is largely so. We all know the importance of doing away with conditions that sap the vitality of the race. The filling up of our country has accomplished the desired result in many parts of the Northern and Middle States, practically obliterating malaria, without interference on the part of physicians. There are many places where this is not so; and the remedy

is first to be applied in a palliative way, by excluding the mosquitoes from houses, draining small pools of water near at hand, and oiling those which cannot be drained. The main point is the elimination of the swamps. To arrive at a proper remedy we must appeal to the state and nation, as well as to the citizens. Can we not interest the state and the nation in the obliteration of the big swamps? Should not national drainage go alongside of national irrigation, and is it not as important? Irrigation led only to public wealth; this leads to both health and wealth. If we do not remove malaria from the south lands, we shall find the negro the only man who can stand it.

DISCUSSION

DR. M. P. RAVENEL, Madison, Wis.: I was brought up on the idea that "country fever" (as malaria was called in Charleston, S. C.) was invariably fatal; and that for a white man to spend the night at St. Andrew's Parish—which is across the river from Charleston, would be an act equal to shooting himself. All through the lower regions of the South it is the habit for people to leave their plantations on May 15, and not to go back to them until after the first frost in the fall. Many people say that the negro is immune to malaria, but I have seen many negroes die of it. The plantation negro is immune to this disease; but the negroes from the foot-hills of the mountains, when taken down to the phosphate fields, are found to be very susceptible. The immunity of the negro race to malaria is acquired. The result of progress around Charleston has been such that at present the white man sleeps in St. Andrew's Parish with impunity. This is due to the drainage of the swamps. There is no screening of the houses even. The poor whites of the south are generally accused of laziness; but the fact is that they are as energetic as any people, when they are well. Malaria, together with hookworm disease, has been a primary factor in taking away their ambition. There is no doubt that with the drainage of these malarial districts and the cultivation of areas of land, there has been an enormous material development; so that the public health question is of great importance to this country from that standpoint, as well as the racial one.

DR. B. F. ROYER, Harrisburg, Pa.: Malarial fever in Pennsylvania is a reportable disease and a placard is put on each premise where it exists.

DR. E. H. HUME, Changsha, China: In Central China, where a great deal of rice is raised, there are no anopheles within hundreds of miles; yet in other sections of the rice country, there are crowds of them. The studies now seem to indicate that the presence of anopheles has something to do with the kinds of fish, etc., contained in certain waters. We hope within the next few years to find the solution of this problem. The distribution of malaria is being worked out in China as a problem of much importance, because the disease is so scattered in that country.

DR. WILLIAM H. JEFFERYS, Shanghai, China: There has been a bill passed in the state legislature of Maryland providing that the state will pay two-thirds of the cost of draining any swamps, if the land owners will pay the remaining third. So far, very few land owners have taken advantage of this law. Therefore, the draining of swamps on a big scale will have to be done by the state or Congress.

Bacteriemic Nature of Leprosy

DR. DAMASO RIVAS, Philadelphia: The work is based on the fact that *Bacillus lepræ* is easily found in the blood of cases of leprosy. The method consists in collecting 0.1 to 1.0 c.c. of the patient's blood, from the tip of the finger or toe (free from lepra lesions), or from a vein, in about 5 to 20 c.c. of a 2 per cent. solution of acetic acid, in which the erythrocytes are dissolved. The mixture is centrifuged for about fifteen minutes, and the sediment is examined for alcohol acid-fast bacilli. The method of staining is one usually followed in the examination for tubercle bacilli. The sediment is spread on a slide, dried, fixed, stained with carbol fuchsin, decolorized with 30 per cent. hydrochloric-acid solution in 95 per cent. alcohol, and counterstained with methylene blue. This method is advantageous in demonstrating the bacteriemic nature of leprosy and also as a means of diagnosis of the disease.

Early Diagnosis of Filariasis

DR. DAMASO RIVAS, Philadelphia: This method is based on finding the microfilaria in the blood in the early stage of the disease; that is, before the symptoms due to obstruction in the flow of the lymph, such as lymphangitis, elephantiasis, etc., are manifested. The procedure consists in collecting from 0.1 to 1.0 c.c. of the blood, from the finger, in about 5 to 10 c.c of a 2 per cent. acetic-acid solution, in which the erythrocytes are dissolved. After shaking, the mixture is centrifuged for about five minutes, and the sediment examined. Either fresh cover-glass or dried and stained preparations are made from the sediment. With the acetic-acid method, it is immaterial at which hour of the day or night the examination is made. If the case is positive, the microfilaria will be found in the sediment.

Investigation of Louisiana Rice With Reference to the Etiology of Beriberi

DR. CREIGHTON WELLMAN and DR. C. C. BASS, New Orleans: With the purpose of determining whether the experimental results obtained with the polished rice of the Orient could also be obtained with rice grown in Louisiana, we undertook the following series of experiments with chickens. The best culled Louisiana white rice was obtained after chaff had been removed, and was designated as unpolished rice. Another sample of the same lot was obtained after culling and finishing, ready for the market, except that the final coat of glucose and talcum had not been applied. Marked nerve symptoms appeared after from seventeen to twenty-three days in fowls fed exclusively on polished Louisiana rice. The same rice unpolished does not produce the disease, and such rice with a general diet promptly cures the disease. A diet of pure cane-sugar will produce this characteristic more rapidly and completely than the polished rice. Pure corn-starch will also produce the condition rather more slowly than polished rice.

The Public Health Problems in Connection With Beriberi

DR. R. H. CREEL, Ellis Island, N. Y.: In the United States beriberi has been confined to sporadic outbreaks in various parts of the country during the last twenty years. There is no evidence of any increase and in this country the disease has not assumed public health proportions. The origin of beriberi is not known, but the great epidemicity of the disease during the last thirty years has been coincident with the increased output of steam-milled or polished rice. Beriberi in Manila has steadily increased. The disease has been practically suppressed in government-controlled institutions in the Philippines. The prevention of beriberi lies in government control of the milling process of rice. A rice law similar to the corn law of Italy would enforce this requirement on all rice imported or milled locally. The culture of rice having a white pericarp instead of red will materially reduce prejudice against unpolished rice.

Discussion on Beriberi

DR. R. L. WILBUR, San Francisco: We must make a distinction between polyneuritis due to inanition and that due to infectious microorganisms. It is particularly difficult for me to understand why on shipboard a number of sailors and officers should all come down, within the space of a few days, with acute symptoms of beriberi, and even die within a day or two. Certainly one would expect, if it is entirely due to food, that we would get much more scattered cases, rather than epidemic ones.

DR. JOHN M. SWAN, Rochester, N. Y.: In the province of Canton, China, and more particularly in the city of Canton, practically outside of the zone where beriberi is very prevalent, we had, in 1907, a very severe outbreak of beriberi in the military camps, east of the city. We feel that there is little question now as to the causation of beriberi. The question is whether it would be practicable or possible to overcome the difficulties which would arise in recommending laws or taxation, or the adoption of such measures by the different governments, as would control the product of this polished rice. Years ago we supposed beriberi to be contagious; but in recent

years we have not isolated these cases, and have never seen any indication of contagion.

DR. W. H. JEFFERYS, Shanghai, China: It is hard to accept the polished rice theory because the disease apparently does appear epidemically. I am entirely convinced that the epidemicity is due to the fact of the use of certain brands of rice. Shanghai and Hong Kong are the places where beriberi is most pronounced in China. In St. Luke's Hospital we have paid a very high price for rice and have had a great deal of beriberi. Before the theory was established we used to add dried beans to the diet as a regular thing; and that kept away beriberi more or less. With the removal of the beans and a diet of white rice, beriberi used to break out almost like an epidemic in the ward.

DR. JUDSON DALAND, Philadelphia: Ten years ago none of us accepted the actual cause of this disease, but even then the relation of beriberi to rice was referred to. The majority then considered it of bacterial origin. I do not think that the epidemic phase is to be strongly considered in the face of the evidence before us. The polished rice theory seems to be conclusive. Recent experiments show undoubtedly that animals fed on polished rice lose weight, become paralyzed and eventually die. If unpolished rice and other articles of diet are added, this is prevented. If in beriberi we have an example of an individual whose food-supply depends entirely on the carbohydrates contained in rice, and from it you subtract phosphorus, in consequence of which certain unknown changes take place in the body by which we have polyneuritis, we have a condition closely approaching another which brings about neuritis—namely, inanition. Rice which has less than 0.4 per cent. of pentoxid should be looked on as a prejudice to health, and those disposing of such rice should be dealt with accordingly.

DR. HENRY J. NICHOLS, Washington, D. C.: One interesting point about this condition is that it can be produced by the feeding of corn-starch or molasses or cane-sugar. The incubation period of these symptoms of paralysis in the chicken is much shorter than in man. Man will die of starvation before these symptoms are developed. Either on a diet of polished rice, or on no diet at all, you have this same lack of phosphorus, or whatever it is. Cane-sugar, or a thousand other things, might give the same results. It seems to me that beriberi, as we have it in the East, is established as fully in connection with polished rice as scurvy is with lack of fresh vegetables.

DR. R. H. CREEL, Ellis Island, N. Y.: In the Java possessions, where 90,000 persons were fed entirely on red rice, there were only nine cases of beriberi; whereas in those persons fed on white rice there were 280 per every 10,000. It seems to me that this is most conclusive.

DR. JOHN M. SWAN, Rochester, N. Y.: In regard to the infectious nature of the disease, from my reading I have never been convinced of it. Many statements have been published in which beriberi and pellagra are said to be similar, but it seems to me that beriberi is more like scurvy.

Some Investigations in Leprosy

DR. CREIGHTON WELLMAN, New Orleans: Salvarsan is of great value in the early treatment of leprosy. During the past nine months Dr. Duval and myself have been working on the cultivation of the bacillus of leprosy. We have recently come to the conclusion that the chromogenic acid-fast bacillus—first described by Clegg—is to be regarded as the etiologic factor in leprosy. We have isolated from a leprous lesion a slow-growing, non-chromogenic bacillus, without the polymorphism of the Clegg bacillus, which, with two exceptions, can hardly be distinguished from the tubercule bacillus. First, it will not grow except on a special medium, either in the beginning of isolation or in later transplants. It cannot be coaxed into saprophytic media, but can grow only on special media. This culture has been cultivated on a medium devised by myself. It is made by taking human placenta and infusing at refrigerator temperature for two hours. Human placenta at term is very rich in amido-acids before putrefaction has taken place. This medium is a very close reproduction of the habitat of the leprous bacillus in infected tissue.

Gangosa

DR. G. L. ANGENY, Philadelphia: Gangosa has been prevalent in Guam for more than a century. It is destructive, showing ulcerations of the oral and nasal mucous membranes. It begins as an ulcer of the nose, mouth or pharyngeal wall, with no pain or other symptom. The patient is not aware of its existence until the ulcer has reached considerable size. The process may advance until the bone is destroyed. The duration varies from a few months to many years. The general tendency is to recovery. Death is usually due to some intercurrent disease. The etiology is obscure.

DISCUSSION

DR. CREIGHTON WELLMAN, New Orleans: In California I had an opportunity to study some half dozen cases of what had been diagnosed as gangosa in the navy hospital at Mare Island. All the cases which I saw looked very much like lupus. There was one case, however, in which the involvement of the hard palate was puzzling. At this time Dr. Garger had isolated a bacillus which he believed to be closely identified with gangosa, and by the use of autogenous vaccines he had effected an apparent cure in one or two of the worst cases. Patients whom he treated with this autogenous vaccine had been treated for syphilis and grown steadily worse. The bacillus which Dr. Garger isolated was a diphtheroid. The fact that these diphtheroids are so easily isolated from any sore throat makes it probable that this bacillus of Garger's is the etiologic factor.

A Malarial Hotbed Within Sight of the National Capitol

DR. THOMAS W. JACKSON, Fort Washington, Md.: I should like to call attention to the continued existence of malaria within fifteen miles of Washington, though in a greatly diminished degree, owing to improved sanitary conditions and the extermination of the mosquito.

DISCUSSION

DR. DAMASO RIVAS, Philadelphia, Pa.: My experience has been that it is very difficult to get patients to take the quinin faithfully, and it is most efficacious to give it one hour after the temperature begins to fall. We know that at that time the parasite is very young, and is apt to take more quinin then than he will later. The doses are about ½ gr. to 7½ gr., always diluted with hydrochloric acid. In regard to the recurrences of malaria, unquestionably these are attributable to bad management—that is, giving quinin at the wrong time.

DR. WILLIAM KRAUS, Memphis, Tenn.: About a year ago I had a patient referred to me for the administration of salvarsan. On the day he arrived, he had a chill. The result of the salvarsan was partial disintegration of rings—pseudo-autumnal form, and no subsequent paroxym of this same fever. On the day following, however, the malaria became more active, but coincident with that there was the disappearance of parasites and since that time the patient has not had any further recurrence. It is possible that this remedy may have a differential effect, which is the very thing we have been unable to obtain with quinin.

DR. CHARLES CRAIG, Washington, D. C.: I do not think that quinin prophylaxis can be compared with mosquito extermination. Certainly, however, quinin prophylaxis has had a great deal to do with the eradication of malaria. I had an experience at Fort Stoltzenburg, which is supposed to have the worst record for malaria of any post in the United States Army. We tried every way we could to exterminate malaria, and finally started on a thorough quinin prophylaxis. We had the patients come to the hospital twice a week, and made them take it in the presence of an officer. When we did that, the numerical ratio went down over 50 per cent.

DR. JOHN M. SWAN, Rochester, N. Y.: I used to teach my students that it was necessary for them to administer quinin to their patients after their clinical recovery for at least two years. My reasons for teaching that was that I accepted the theory that the recurrences or relapses were due to parthenogenesis. There always seemed to me to be a parallel between this disease and another that I think is due to an animal parasite, namely, syphilis. We know well that after the clinical manifestations of syphilis are gotten rid of, it is necessary to

continue treatment for a long period to prevent tertiary symptoms. I believe the administration of quinin will probably prevent relapses. Therefore it is possible for a person with the parasites in the blood to present a perfectly normal blood picture until he relapses.

DR. JOSEPH H. WHITE, New Orleans: I feel that proper prophylaxis demands not only the destruction of the mosquitoes and the destruction of the unique carriers, but also the use of quinin as a prophylaxis. Just one instance with regard to a unique carrier: Four years ago I was asked if I would not go to a certain town where a case of yellow fever was thought to be. I went, looked the patient over carefully, examined his blood for about an hour, taking two or three specimens, and got nothing. I went back, and looked him over again, after being away two hours in the laboratory; found him with a rising temperature; took another specimen and found organisms.

DR. T. W. JACKSON, Fort Washington, Mo.: The principal objection I have to the widespread, indiscriminate use of quinin is that it undoubtedly vitiates blood diagnosis. Under those conditions, you may frequently be badly put about for a diagnosis, when the quinin taken has been sufficient to drive the parasite from the peripheral circulation. As to the reaction, I do not think that any of us are in a position to lay down a dogmatic length of time over which medicine shall be given; but I think we often make the period too short. The only guide we have is repeated examination of the blood.

Resolution

Resolved, That the American Society of Tropical Medicine endorse the creation of a United States Commission for the Study and Prevention of Malaria.

Resolved further, that Congress be called upon to appropriate funds for this purpose.

AMERICAN SURGICAL ASSOCIATION

Annual Meeting, held at Montreal, Canada, May 29-30, 1912

(Concluded from page 218)

Hemorrhage Into the Peritoneal Cavity Caused by Accidental Rupture of the Ovary

DR. ALEXANDER PRIMROSE, Toronto: The two cases seen by me were not connected with pregnancy. In both instances what appeared to be a normal graafian follicle had ruptured as the result of an accidental strain. In one instance, the patient lifted a heavy weight and the rupture immediately occurred. In the other case the patient had a violent attack of vomiting in the early stage of an acute appendicitis and this brought about a similar result. In both instances serious hemorrhage occurred into the peritoneal cavity and almost proved fatal in one of the patients. The sequence of events in the latter case was quite obvious. The patient had an attack of acute appendicitis two days before her monthly period was due, and a violent attack of vomiting had brought about rupture of a graafian follicle. The hemorrhage into the peritoneal cavity had been slow and had shown no symptoms but was only discovered when the abdomen was opened for the removal of the appendix twelve hours afterward. Had the patient been left until morning not only would she have run considerable risk from an attack of acute suppurative appendicitis, but she might have lost her life from hemorrhage. These two cases have some points in common. Thus, an accidental strain caused rupture of an ovarian blood-cyst and induced the hemorrhage. In both the graafian follicle was ruptured two days before a menstrual period was due. In each instance the extravasated blood was clotted in the pelvis and had remained fluid in the upper part of the peritoneal cavity.

Surgical Diseases of the Abdomen and Uterus Complicating Pregnancy

DR. MAURICE H. RICHARDSON, Boston: A pregnancy threatened by surgical conditions within the uterus should not be interrupted unless it is clear that pregnancy cannot possibly go on. For pregnancy to be allowed to continue it must appear that the life of the child is practically safe while the danger to the mother is slight. To allow the pregnancy to continue uninterruptedly it must appear that at the last moment, through intervention, both mother and child may be saved by a cesarean section or by an operation no more dangerous to the mother than would have been an early operation destructive to the child and saving to the mother. To allow pregnancy to continue it must appear that the child can live without jeopardizing by delay the success on the mother of a radical operation for malignant or other disease, as in cancer of the cervix, the breast, or elsewhere; acute appendicitis, acute cholecystitis, pyelitis, etc. Pregnancy, complicated by abnormal surgical conditions that seem to demand its forcible interruption, should be carefully watched, as it were, knife in hand, but never interfered with unless the need for interruption is plain.

DISCUSSION

DR. HOWARD LILIENTHAL, New York City: A woman, aged 32, married two months, had menstruated for the last time six weeks before I saw her, and then after an indiscretion in diet she vomited and became very faint. In a few hours another attack of faintness came on, followed by others at short intervals; she had all the symptoms of hemorrhage. Incision revealed a fibroid as large as a cocoanut attached to a pregnant uterus, and the peritoneal cavity full of blood. The fibroid was removed and the uterus sutured; the site from which the hemorrhage came could not be discovered. The patient made a good recovery, and there had been no miscarriage at the time of this report, three weeks after operation.

DR. THOMAS W. HUNTINGTON, San Francisco: It is a wise precaution to remove at an early date in pregnancy an "occult" appendix, that is, one which causes few symptoms, but which every now and then gives sufficient evidence of its existence to warrant removal, considering that adhesions might result from such an appendix which might later be a source of serious difficulty.

DR. ELLSWORTH ELIOT, JR., New York City: A young woman, 18 years of age, was supposed to be suffering from an attack of acute appendicitis. Operation revealed no disease of the appendix, but the peritoneum was filled with blood; there was a laceration of the right fallopian tube near its fimbriated extremity. This extremity was amputated, but microscopic examination gave no evidence of a tubal pregnancy.

DR. JOHN B. DEAVER, Philadelphia: I consider acute appendicitis more important in the female than in the male. I believe that salpingitis often results from the condition of the appendix. I have seen more cases of tubal abortion than of tubal rupture. In acute appendicitis during pregnancy, I advocate immediate removal of the appendix.

DR. RICHARD H. HARTE, Philadelphia: A woman long past the menopause was driving when she suddenly experienced violent pain on the right side; operation disclosed a large ovary, about twice the normal size, ruptured directly across, and the pelvis filled with blood. The ovary was removed, and after much examination microscopically a report was finally sent in of angiosarcoma. This case occurred over a year ago and up to the present time there has been no recurrence of the condition in the pelvic organs.

DR. ROBERT G. LE CONTE, Philadelphia: I had a patient who was admitted to the hospital with all the symptoms of ruptured ectopic pregnancy; at operation a quart of clotted and fluid blood was removed; the right ovary was ruptured and had the appearance as if a graafian follicle had existed filled with blood and had been torn across, the vessels still bleeding; ovary was removed and tube left. It more closely resembled a laceration of the ovary than an extra-uterine pregnancy.

DR. ARPAD G. GERSTER, New York City: Twice I have seen a pregnant uterus removed, once supposedly for an ovarian tumor and once for a fibroid growth.

DR. CHARLES A. PORTER, Boston: A woman of 30, married and pregnant two months, had pain, tenderness and fever,

then increasing constipation and tenderness in the left iliac fossa. Visible peristalsis. Operation showed an almost complete obstruction of the cecum and a large intramesenteric abscess, probably a diverticulitis. Abscess was drained and a lateral anastomosis was done without excision. Patient has made a good recovery and so far, two months since operation, there has been no interference with the pregnancy.

Acute Diverticulitis of the Sigmoid Flexure

DR. CHARLES A. POWERS, Denver, Colo.: A very obese man, aged 49, manifested symptoms of an acute left-sided appendicitis. Operation was done at an early hour, a gangrenous diverticulum the size of an olive being removed from the middle of the convex border of the sigmoid flexure, together with a considerable amount of adjacent gangrenous epiploic fat. Careful closure of the wound in the intestine, stab wound drainage through the left flank. A stormy period of two days was followed by a smooth course. On the seventh day the temperature and pulse had been normal for some days and the patient was apparently making an excellent recovery, when he suddenly succumbed to pulmonary embolism, death taking place one hour after the first thoracic symptom. Postmortem examination revealed a clean abdomen without peritonitis, the suture of the sigmoid being intact, and the intestine showing no appreciable narrowing at the seat of the affection.

Radical Operations for Cancer of the Rectum and Rectosigmoid

DR. WILLIAM J. MAYO, Rochester, Minn.: Failure to remove carcinomas of the rectum by a block dissection, and not any especially malignant character of the process itself, is responsible for the pessimism of the medical profession as regards the operative cure. Cancer of the rectum is a slow process and the lymphatics are involved late. The true rectum lies between the third sacral vertebra and the levator ani muscle, and is a distinct organ. When this portion is involved in malignant disease it should be removed entire, as would a malignant process in any other organ. The terminal rectum or anal canal is involved in only about 6 per cent. of the cases; its lymphatics drain into the coccygeal, rectal and into the inguinal glands. Radical operations on the rectum for malignant growths, as a rule, injure the muscles and nerves to so great an extent that rectal control is damaged or lost. In most cases a permanent colostomy through the left rectus muscle or a sacral anus gives good functional results and permits a wide dissection of the entire rectum with removal of the fat, fascial structures and lymph-nodes, and greatly diminishes the operative risks. Ninety per cent. of the operative deaths are due to sepsis, usually fecal leakage from attempts to conserve function. Preliminary exploration through the abdomen is necessary to avoid operating on patients with hopeless metastasis. This may be omitted in those who for any reason are poor surgical risks, to reduce hazard. In such cases the sacral operation is indicated.

Perineal or posterior sacral operations, one stage, gave the smallest mortality. The procedure is indicated in the very fleshy, and in the anemic, and in poor surgical risks. The modified sacral operation gives good space, and enables wide extirpation at a single operation. Operations through the abdomen or abdominal combined with perineal in one stage, gave the highest mortality. Operations in two stages, first, abdominal exploration with temporary or permanent colostomy, and second, a week later, after thorough cleansing of the lower fragment, complete posterior dissection, gave the best results with a mortality approaching that of operations through the perineum and posteriorly, and less than one-half the mortality of the abdomino-perineal in one stage. This operation is the one of choice in the large percentage of cases if the patient is a good risk and especially if there is good prospect of restoration of function. Diverting the fecal current temporarily greatly improves the prospect of successful union of the proximal and distal fragments of bowel.

The Treatment of Fistula in Ano

DR. ARTHUR W. ELTING, Albany, N. Y.: Two cardinal principles underlie the treatment of fistula in ano; first, the separation of the fistulous tract from the bowel, and second, the closure of the communication with the bowel and removal of the diseased rectal tissue. The operation proposed is the removal of the lower bowel to a point just above the level of the internal fistulous opening by the Whitehead method of operation, with thorough curettage of all the fistulous tracts. When no internal opening can be demonstrated, the bowel is removed at the line of insertion of the levator ani muscle, care always being taken to keep the dissection near the mucosa and to avoid all injury to the sphincters. The healthy skin and mucosa are approximated with interrupted silk sutures. This method has been employed without mortality in 105 consecutive cases; ninety-six of these were histologically nontuberculous, and nine were histologically tuberculous. In all the cases complete and permanent cure was obtained, with preservation of normal function in all but four, in all of whom more or less destruction of one or both sphincters antedated the operation.

Acute Inflammation of Long Bones

DR. ROBERT G. LECONTE, Philadelphia: Trauma still plays a considerable part in predisposing to the disease, while the exciting cause is one of the organisms of suppuration, principally *Staphylococcus pyogenes aureus*. Whether the starting-point of the lesion is in the cortex, the medullary cavity, the end of the bone, or the epiphysis, success in treatment depends on opening up the original focus at the primary operation. The necessity of prompt operation, with adequate drainage of the primary focus of infection and the removal of all diseased bone at the primary operation, even if that removal entails a more or less complete resection or excision of the shaft, should be emphasized. When the condition of the patient warrants it at the primary operation, such radical treatment greatly shortens the time of convalescence, prevents further destruction of bone, lessens the subsequent number of operations, and reduces the mortality.

Surgery of the Long Bones

DR. JAMES E. MOORE, Minneapolis: The open treatment of fractures has an established place in surgery, but at present is being overdone. The Lane plate is the best device for fixing fragments through open wounds. The plates requiring removal have usually been very close to the surface. The plate cannot be used in compound fractures satisfactorily, because of the lowering of the resisting power of the tissues by the accident. The wound sometimes heals over a plate after infection. The use of the bone splint taken from the patient's own person is doubtless the best resource in patients who have not good bone producing power. The greatest advance in surgery of the long bones in recent years is in treatment of fracture of the neck of the femur. Since using the two-way pull of Maxwell I have been as confident of securing bony union in fracture of the neck of the femur as in the shaft. Fracture of the neck of the femur is quite common in children, and very commonly neglected. Non-union is the usual result after treatment by the older methods, but even then the case is not hopeless, for the fracture can be successfully treated through an open wound.

Safety in the Operative Fixation in Infected Fractures of Long Bones

DR. HOWARD LILIENTHAL, New York City: Accurate fixation is fully as important in cases of infection with fracture as it is in clean cases. In septic fractures operative fixation should be by temporary apparatus which is easily removable. I would also emphasize the importance of drainage in cases which are septic or in which sepsis threatens.

Operative Treatment of Fractures

DR. JOHN B. WALKER, New York City: In a series of twenty-one cases of fractures of the femur, operation was performed only after the best efforts of conservative treatment had failed. In every case before operation general anesthesia had been employed to assist the efforts in reduction, also suitable extension had been applied. Nevertheless, in every case there persisted over 2.5 cm. shortening. Axial rotation was

present in all cases, together with angulation. In operating I try to carry out scrupulously every minute detail of Lane's technic for there is no province of surgery in which results depend more on the mechanical skill and cleanliness of the operator. Under no circumstances whatever do the fingers ever enter the wound. After the strong plate has been most satisfactorily applied by snug screws to the shaft of the femur it would seem as if no motion were possible. If, however, moderate strain be applied to the leg, some motion at the fracture can be appreciated. If this be continued the screws will become loosened and the fragments disarranged. For this reason no strain must be permitted. The plate must be considered only of value merely to approximate the fragments and not at all sufficient to hold them. For this purpose the whole reliance must be placed on the solid external plaster cast, most accurately and carefully applied. If this does not succeed in absolutely immobilizing the fragments, the operation may fail. The rapidity of union is proportional to the accuracy of reduction and the retention of fragments; delayed union is very largely due to faulty adjustment. Plating the fragments does not increase the nutrition but it brings the fragments into early intimate contact. As our experience grows, we will be able to select after a study of skiagrams those cases in which operation is indicated.

DISCUSSION

DR. CHARLES L. SCUDDER, Boston: The ideal toward which all should strive would be that point where a surgeon on seeing a fracture could definitely make up his mind as to which method, the operative or the non-operative, would give the best results, and to proceed accordingly. I approve of the operative treatment in carefully selected cases, but I believe many results obtained by it might also be obtained by the ideally carried out non-operative treatment in the ordinary cases.

DR. JOSEPH RANSOHOFF, Cincinnati: About 70 per cent. of fractures are not treated by surgeons, but by the country practitioner. It should be an aim of the Association to put means in such practitioners' hands to facilitate the reduction of fractures. For this purpose I propose the use of a pair of common ice-tongs. These tongs can be driven into the lower end of a fractured femur without the use of an anesthetic, and extension up to 40 pounds can be put on, which will usually prove sufficient for reduction. I have overcome the possibility of stiffness of the knee-joint resulting by applying these tongs with the limb on a double-inclined plane.

DR. THOMAS W. HUNTINGTON, San Francisco: As a rule, in the hands of competent and skilled surgeons, the operative treatment of fractures is safe. Before treatment can be instituted in many cases of compound fractures, there is an infection of the medullary cavity, and the introduction of foreign bodies proves an inviting field for the extension of such infection along the medullary cavity with a resulting osteomyelitis and possibly either loss of a limb or the patient's life. I believe in allowing compound fractures to take their own course with as little interference as possible after apposition of fragments is obtained, until after the wound is healed and danger of osteomyelitis is passed.

DR. MAURICE H. RICHARDSON, Boston: Operative treatment of fracture should be performed only by skilled men under the most favorable circumstances.

DR. OTTO KILIANI, New York City: It should be impressed on the profession and the laity that excellent functional results can be obtained without an anatomically perfect alignment of bony structure.

DR. FRED B. LUND, Boston: In employing the operative method on old fracture cases there is the difficulty to be overcome presented by callus and adhesions, and the majority of bad results occur in such cases. In carefully selected cases this operative method is applicable to early fractures, particularly those of the long bones, transverse fractures of the femur, certain oblique fractures of the tibia with much overlapping, fractures of the humerus in which the ends do not come together, and fractures of both bones of the forearm. A patient is more comfortable when put in a plaster-of-Paris spica dressing than with a Buck's extension with which the adhesive plaster is so apt to slip.

DR. GEORGE E. ARMSTRONG, Montreal, Canada: A device which should always be tried in compound fractures in order to lock the fragments is to notch the ends so that they dovetail into each other. I have obtained excellent results by this procedure. This operative method should not be attempted if it is possible to lock the fragments without it.

DR. CHARLES L. GIBSON, New York City: It is perfectly proper for Mr. Lane to operate on fractures, but only one man in a thousand is so qualified, and therefore such work should be undertaken only by skilled surgeons.

DR. G. G. DAVIS, Philadelphia: Not enough attention is paid to the methods of lateral traction or abduction in the reduction of fractures of the femur, and too much attention is given to Buck's extension.

DR. RICHARD H. HARTE, Philadelphia: Many of the poor results obtained in simple fractures treated by the conservative methods to-day are due to the fact that the setting and reduction of these fractures in the large hospitals, are, as a rule, relegated to the hospital intern, whose experience is not sufficient to warrant such responsibility being placed on him. The attention of the chief, all too frequently, is directed to fracture cases only when they begin to do badly.

DR. JOHN H. GIBBON, Philadelphia: One cannot jerk a fracture into place in five minutes, but in many cases in which the traction is allowed to extend over several days and there is a long and steady pull, the reduction may easily be accomplished. This applies particularly to fractures of the upper third of the femur and the surgical neck of the humerus. In fractures of the surgical neck of the humerus, treated by abduction and Buck's extension, with the arm at right angles to the chest and the patient in bed, reduction can be safely accomplished.

DR. THORKILD ROVSING, Copenhagen: I have obtained successful results from the use of Lambotte's method, especially in contused fractures. With regard to aseptic ankylosis in joints, I have met with considerable success from the use of the injection of sterilized petrolatum into the joint.

DR. JOHN B. MURPHY, Chicago: Osteomyelitis is in reality a condition like a gangrenous appendix in the end of the bone. Early and radical operation is indicated. A delay of forty-eight hours is not only extremely serious but often fatal. In these cases I suggest the advisability of utilizing the method of bone transplantation, after resection of the diseased portion.

The Conservative Treatment of Giant-Cell Sarcoma, With the Study of Bone Transplantation

DR. JOSEPH C. BLOODGOOD, Baltimore: It is a question whether the so-called giant-cell sarcoma should be included among sarcomas. I prefer the term "giant-cell tumor." Up to the present time I have been unable to find an authentic case in which this giant-cell tumor produced death by metastasis. The evidence so far demonstrates that amputation and, in many instances, resection in continuity, are unnecessary, or avoidable, surgery. Curetting should be the operation of choice in the first instance. It should be performed under an Esmarch bandage, the bone cavity disinfected with pure phenol (carbolic acid), followed by alcohol; if the resulting cavity is large healing will be accelerated by filling the cavity with a piece of transplanted bone. After resection the wound should also be disinfected as after curetting; if possible, the defect should be filled by a piece of bone taken from the shaft of the bone involved by splitting longitudinally the remaining uninvolved bone. If this is not feasible the tibia is the best bone from which to take the transplant. The diagnosis of a medullary giant-cell tumor cannot be made positively until the tumor is explored with the knife. The only hope for increasing the number of cures in the more malignant forms of sarcoma of bone is in the early and systematic diagnostic employment of the *x*-rays.

DISCUSSION

DR. WILLIAM B. COLEY, New York City: I disagree with Dr. Bloodgood that giant-celled sarcoma never produces metastasis. There are certain cases of giant-celled sarcoma in which it is not safe to use conservative treatment and in which even the most radical treatment, amputation of the proximal joint,

offers little or no chance of a cure. In twenty cases a clinical diagnosis of giant-cell sarcoma was confirmed by the microscope; ten were of periosteal, ten of central, origin. In fifteen of the twenty cases the mixed toxins of erysipelas and *Bacillus prodigiosus* were used before or after operation. In ten cases amputation was performed. In nine cases either no operation or a conservative one (curetting) was done; in three of the nine cases the disease was too far advanced for the most radical operation, even a hip-joint amputation, and in one case, a subperiosteal sarcoma of the femur involving the lower third, metastasis had taken place. This patient is now well ten years after the toxin treatment was begun. In addition there had been two recent cases of sarcoma of the long bones in the hands of English surgeons in which the limb was saved by the use of the mixed toxins. In twenty-one cases, out of a personal series of 107 cases of sarcoma of the long bones, the patient lived and remained well more than three years after operation. I believe the value of the mixed toxins in many of these cases to be quite beyond question.

DR. EMMET RIXFORD, San Francisco: I had a case of giant-cell sarcoma of the lower end of the ulna treated by resection of the lower end of the bone, which remained well without recurrence for eighteen years.

DR. JOHN B. MURPHY, Chicago: In judging of the malignancy of a giant-cell sarcoma I rely more on the *x*-ray picture than on the microscopic examination; the disease in malignant cases is found to cross the epiphyseal line, while in the more benign form it does not do so. I approve of resection rather than of curettement in these cases, following the resection by the transplantation of another piece of bone for the maintenance of support.

Current Medical Literature

AMERICAN

Titles marked with an asterisk (*) are abstracted below.

Bulletin of Johns Hopkins Hospital, Baltimore

June, XXIII, No. 256, pp. 159-190

1 *Intestinal Obstruction: Study of Toxic Factors. H. B. Stone, B. M. Bernheim and G. H. Whipple, Baltimore.
2 *Primary Carcinoma of Liver. M. C. Winternitz, Baltimore.
3 *Method of Correlated Teaching of Pathology and Bacteriology in Second Year of Medical Instruction. F. P. Gay, Berkeley, Cal.
4 Richard Bright's Travels in Lower Hungary: Physicians' Holiday. F. H. Garrison, Washington, D. C.
5 Austin Flint: His Contributions to Art of Physical Diagnosis and Study of Tuberculosis. H. R. M. Landis, Philadelphia.
6 Cyrano De Bergerac's Opinion of Medical Profession. C. G. Cumston, Boston.

July, XXIII, No. 257, pp. 191-222

7 *Effect of Ligation of Common Iliac Artery on Circulation and Function of Lower Extremity. W. S. Halsted, Baltimore.

1. **Intestinal Obstruction.**—The authors summarize their findings as follows: High loop obstruction in dogs causes very rapid death, twenty-four to sixty hours, as a rule, even when the loop contains no food material or secretion from the stomach, liver and pancreas. Low loops (ileum) of similar nature are much less rapidly fatal. Surgical drainage of this loop will save the dog's life. Excision of this duodenal loop does not necessarily disturb the animal's health. The material obtained from obstructed loops is toxic when injected into dogs, the high loop material being much more toxic. This material causes profound splanchnic paralysis with extreme congestion of all this area, particularly the small intestine. The toxic material introduced into normal animals produces many changes similar to those found in the animals with closed duodenal loops, namely, low blood-pressure and temperature, excretion of large amounts of fluid into the intestinal canal and fatal shock. This toxic substance given in a single injection causes a reaction in the dog which is almost identical with the picture of anaphylaxis in this animal. The toxic material is not injured by heating at 60 C. for any length of time, centrifuging and filtering in any manner. It is not impaired by prolonged autolysis, by pancreatic digestion and bacterial fermentation. Hydrolysis with dilute acids probably destroys it. No such toxic substance may be obtained by autolysis, digestion or putrefaction of the normal intestinal mucosa. Injections of sublethal doses of this toxic material will protect against subsequent large doses and probably prolong life after a closed duodenal loop has been established.

2. **Primary Carcinoma of Liver.**—Primary carcinoma of the liver was found by Winternitz to be a rare condition, occurring in 0.28 per cent. to 3 per cent. of all autopsies from various statistics. It occurs most frequently in adult males, but is proportionately relatively common in females and may occur at any age. A number of cases have been described in infancy. Clinically, the disease is difficult to differentiate from cirrhosis of the liver. Its rapid course, the presence of an enlarged, irregularly nodular liver, hemorrhagic ascites, or metastases to accessible regions, which is exceedingly rare, may be of assistance in the diagnosis. The tumor may occur in normal or in diseased livers. In a tremendous percentage of cases the liver presents an ordinary type of cirrhosis, but various other types of chronic hepatitis caused by syphilis, parasites, etc., may occur. The tumor may arise either from the smaller bile ducts or from the liver cells. It is generally agreed that the cirrhosis precedes the neoplastic formation where these two are associated. The tumor, however, brings about pressure atrophy directly and necrosis of the hepatic parenchyma through its extensive vascular involvement and in this way a fibrosis may result secondary to the tumor growth. The tumor is not in any respect unique. It is unicentric in origin, distributes itself through the vascular system, forming a more or less diffuse growth in the liver and develops autogenously. The rarity of extensive extrahepatic metastases in view of the tremendous tumor thrombi which not only involve the portal, but also the hepatic veins and the vena cava is worthy of note.

3. **Teaching of Pathology and Bacteriology.**—The concentration system has been put in force in the University of California for the first two years' instruction in the medical school. As a result, the student enters the second semester of his second year with physiology, physiologic chemistry, pharmacology and anatomy (with the exception of two half days a week in regional anatomy which includes auscultation and percussion) off his hands. His work in the department of pathology and bacteriology comprises, therefore, four whole days a week (32 hours) for seventeen weeks (544 hours). The average class at present numbers about twenty men and women and the teaching staff consists of three full time ranking men and one half time assistant. In a general way, the work is divided into three closely correlated parts in each of which one of the full time teachers is particularly experienced and interested and for which he is responsible. The four forenoons of the week are devoted to histopathology, morbid anatomy (including individual experience in autopsy work), the experimental production of lesions in animals, and general histopathologic technic. The afternoons are divided nearly equally between general bacteriology and experimental work in infection and immunity. The class exercises both in histopathology and in bacteriology are usually preceded by an introductory talk; more formal lectures in these subjects are regarded as unnecessary in view of the existence of wholly adequate text-books to which students may be referred. A more formal set of lectures, two a week, covers the intermediate field between the better recognized branches of pathology, by discussing the progress of each disease that is being synchronously studied in respect to cause and effect. The elaborateness and practicability of the data of infection and immunity renders their study particularly fitted to represent this field of functional pathology. The rapid development in these subjects moreover, admirably exemplifies the value of the experimental method in the study of disease.

7. **Effect of Ligation of Common Iliac Artery.**—A critical consideration of seventy-six cases collated from 1812 to 1912 by Halsted shows that the uncomplicated ligation of the common iliac artery is not likely to be followed by gangrene, the percentage being from 3.3 to 6.6 instead of 33.3; and that the mortality, contrasted with 60 per cent. as estimated by

Dreist is at most 10 per cent. and probably not more than 6.6 per cent.; or it may even be as low as 3.3 per cent. The data are too meager to justify an expression of opinion as to function, Halsted's patient being the only one observed for sufficient time. In this man, although there may be no visible signs of disturbed circulation, the fact that he is unable to walk further than a very short distance without cramp-like pain would seem to indicate that the impairment of function should be attributed to ischemia of the limb. The operation does not invariably cure aneurysm. The ideal operation in Halsted's opinion is one which causes only so much disturbance of the circulation as is necessarily incident to a spontaneous cure of the aneurysm, namely its obliteration. The condition of the patient permitting, a thorough operative investigation should be made in all cases of aneurysm or wound of the external iliac artery. A fatal termination might have been avoided in a very considerable number of the cases of ligation of the common iliac if this vessel had been temporarily compressed and the precise condition investigated at the first operation. As a general proposition, Halsted would be disposed to ligate permanently, just outside of the sac, all arteries which in the natural course of performance of the Matas operation would be clamped temporarily. And, inasmuch as all arteries leading from the sac should, when feasible, be under the control of clamps (when not controllable by the elastic bandage) before the sac is opened, there are good reasons for removing under the circumstances a sac which has, in the process of the exposure of the arteries for clamping, become almost enucleated.

Military Surgeon, Washington, D. C.

June, XXX, No. 6, pp. 619-746

8 Military Absenteeism in War, With Special Reference to Relation of Medical Department Thereto. E. L. Munson, U. S. A.
9 Medical Department of United States Army in Civil War; Battle of Bull Run. L. C. Duncan, U. S. Army.
10 Typhoid Prophylaxis in National Guard. W. P. Morrill, U. S. Army.
11 Report of U. S. Army Board for Study of Tropical Diseases as They Exist in Philippine Islands. W. P. Chamberlain, E. B. Vedder and J. R. Barber, U. S. Army.
12 Skin Complications of Gonorrhea. W. S. Pugh, U. S. Navy.
13 Gunshot Wounds of Gall-Bladder. C. E. Fronk, U. S. Army.
14 Balantidium Coli as Cause of Dysentery in Philippine Islands. H. R. Weston, U. S. Army.
15 Eye, Ear, Nose, Mouth and Throat in Leprosy. P. C. Field, U. S. Army.
16 Leucopenia. C. L. Cole, U. S. Army.
17 Case of Strangulated Inguinal Hernia. T. H. Bratton, U. S. Army.

Journal of Biological Chemistry, Baltimore

June, XI, No. 5, pp. 443-561

18 Physiologic Action of Some Pyrimidin Compounds of Barbituric Acid Series. I. S. Kleiner, New Haven, Conn.
19 Phytin and Phosphoric Acid Esters of Inosite. R. J. Anderson, Geneva, N. Y.
20 *Presence of Active Principles in Thyroid and Adrenals Before and After Birth. F. Fenger, Chicago.
21 New Method for Determination of Total Nitrogen in Urine. O. Folin and C. J. Farmer, Boston.
22 Apparatus for Absorption of Fumes. O. Folin and W. Denis, Boston.
23 Determination of Urea in Urine. O. Folin, Boston.
24 Determination of Ammonia in Urine. O. Folin and A. B. Macallum, Boston.
25 Urocanic Acid. A. Hunter, Ithaca, N. Y.
26 Sphingosin. P. A. Levene and W. A. Jacobs, New York.
27 *New Methods for Determination of Total Non-Protein Nitrogen, Urea and Ammonia in Blood. O. Folin and W. Denis, Boston.

20. Active Principles in Thyroid and Adrenals.—For this series of experiments, which were carried out during March, 1912, thyroids as well as adrenals were used and in the case of cattle, four stages of age were selected, namely, the fetus about three months old, the fetus about eight months old, young suckling calves six to eight weeks old and full-grown cattle. The results obtained indicate definitely that the thyroid of these animals contains iodin, not merely at time of birth but long before. Since the amount of iodin in the thyroid is an indication of the relative activity of this gland there is evidently a gradual rise in activity of the gland in the fetus and this activity is increased rapidly shortly after birth, reaching its maximum in the young growing animal. The iodin content of the glands from the full-grown animals is very low. This is, however, not unusual as the iodin content varies considerably. The glands were collected during the same period as the glands from the various fetuses. The active principle of the adrenals is also present in the fetus long before maturity and in comparatively higher quantities than in the full-grown animal.

27. Determination of Total Nitrogen in Urine.—In principle this new method is described as a microchemical method based on the Kjeldahl-Cunning process for decomposing nitrogenous materials and on the methods of Nessler and of Folin for the determination of ammonia. Rapidity in every stage of the process is secured by reducing the amount of urine taken for an analysis. The method is described in detail.

West Virginia Medical Journal, Wheeling

June, VI, No. 12, pp. 399-434

28 Surgical Treatment of Musculo-Spiral Paralysis. F. L. Hupp, Wheeling.
29 Early Diagnosis of Tuberculosis. O. W. McMichael, Chicago.
30 Management of Acute Anterior Urethritis. W. S. Robertson, Charleston.
31 Lord Lister. R. M. Baird, Wheeling.
32 Obstetrics Among American Indians. J. N. Alley, Fort Lapwai, Idaho.
33 Vascular Surgery in Emergency Work. W. W. Golden, Elkins.

Journal of Cutaneous Diseases, New York

June, XXX, No. 6, pp. 319-388

34 *Influence of Milk Fat on Skin. D. W. Montgomery and G. D. Culver, San Francisco.
35 *Comparison of Pemphigus Foliaceus and Dermatitis Exfoliativa Neonatorum (Ritter), and Etiology. H. H. Hazen, Washington, D. C.
36 Fibroma Subcutis. M. L. Heidingsfeld, Cincinnati.
37 *Unusual Case of Dilated Capillaries. W. Frick, Kansas City.
38 Views of De Beurmann and Gougerot on Sporotrichosis. E. D. Chipman, San Francisco.

34. Influence of Milk Fat on Skin.—The skin in carrying out its functions uses vast quantities of fat and there is no doubt in the authors' mind that the kind and quantity of fat delivered to it is of very great importance to its health. It is also their opinion that the quantity and quality of fat ingested does not act directly as a poison, but that it lowers the resistance and increases the susceptibility to bacterial attack, rendering the patient liable to acne, seborrheic eczema, furuncle, carbuncle and erysipelas.

35. Pemphigus Foliaceus.—Hazen believes that some cases of pemphigus foliaceus are undoubtedly due to a *B. pyocyaneus* infection and death may take place from a generalized cutaneous infection, probably with the *Staphylococcus albus*. The two diseases are different, though there may be graduations between them.

37. Dilated Capillaries.—The personal history in the case cited by Frick was entirely negative. The patient, male, aged 50, had, at times, some disturbance of his digestion, which was called dyspepsia or indigestion. This was supposed to have been due to his eating at restaurants and boarding houses and to have been the cause of the dilated blood-vessels in his face. He never was intemperate in his habits, never used alcoholics or tobacco excessively and consequently they could be ruled out as the cause of this trouble. In the last ten years this dilation of the capillaries had been slowly extending over the body from the neck down, gradually involving more and more of the skin until almost all of the integument of the body became involved. On the nose it still had the appearance of dilated capillaries, but on the cheeks and forehead it had a purple color which looked like there might be a deposit of pigment. At times this color would disappear to a great extent and simply appear as a very red face, in which points of intensity could be seen everywhere. On the face, pressure with a glass slide was not sufficient to render the face pale, or press the blood out of the skin, but on some other parts of the body where the diseased process had not extended quite so far, the blood could nearly all be pressed out, leaving the skin pale, but with this paleness minute red points could be seen, indicating minute collections of blood-cells (which Frick afterward found were within the capillary blood-vessels). The skin below the knees and on the feet seemed to be free of this condition, and was normal in appearance. The palms of the hands were not involved, but the backs of the fingers were. The mucous membrane of the mouth and the nose also contained dilated capillaries and whenever there was a flushed condition of the face, or an unusual amount of blood brought

to the surface of the body, he felt a fulness in his throat which occasioned a slight cough.

Since March, 1909, he had had an occasional looseness of the bowels, without apparent cause; at times this could be denominated a diarrheal condition, but it seemed rather easy to control. More recently there was observed an increasing inability to control the sphincters of both rectum and bladder, making frequent visits to the lavatory a necessity. When sleeping there was incontinence of urine. Also, there was a tendency to stagger when he walked and especially when he arose to his feet after being seated for a time. On several occasions he fell simply on account of his inability to retain his equilibrium (without any apparent cause). When he lost his balance forward he continued falling forward and when it was lost in the opposite direction he staggered backward until he came in contact with something that would support him, else he would fall. In other words, he was unable to regain his balance when it was partially lost. He said repeatedly that this staggering was not due to dizziness, but seemed to be simply a loss of balance.

Physical examination indicated normal lungs and a normal heart, with possibly an accentuated second sound; the liver was very much enlarged; it felt somewhat nodular and extended down to the umbilicus in the center and almost to the crest of the ilieum on the side of the abdomen; also somewhat farther upward than normal. A peculiar thing about the liver was that sometimes it appeared somewhat larger than at other times. A tumor mass was also felt in the median line, just at the edge of the enlarged liver mass. (This mass during life was taken to be a part of the liver, but the autopsy showed it was a tumor involving the lymph-nodes.) His liver was slightly sensitive to touch, but the patient did not complain of any special pain from the increased size of this organ. The spleen was hardly palpable. After a hearty dinner, in the afternoon, at a time when there was a tendency to an increase of color from the blood in the skin, a specimen of urine taken showed an abundance of albumin present, also a high specific gravity and the presence of epithelial and granular casts. At other times it was normal. Committed suicide by shooting through the head. Necropsy showed enormously dilated capillaries with blood-cells collected in some places, and no blood outside the blood-vessels.

Northwest Medicine, Seattle, Wash.

June, IV, No. 6, pp. 165-196

39 Hypophysis Cerebri and Its Importance to Surgeon. A. C. Behle, Salt Lake City, Utah.
40 Raw Cow's Milk an Unsafe Food. K. Winslow, Seattle, Wash.
41 The A B C of Artificial Feeding of Infants. W. F. Amos, Portland, Ore.
42 Modern Methods of Sputum Examination. R. W. and R. C. Matson, Portland, Ore.
43 Toxemia of Pregnancy and Eclampsia. J. O. Evans, Salt Lake City, Utah.
44 Impressions Gathered on Recent Trip to Some of Surgical Clinics of Europe and America. R. C. Coffey, Portland, Ore.

Journal of Experimental Medicine, New York

July, XVI, No. 1, pp. 1-102

45 *Effect of Certain Experimental Procedures on Islands of Langerhans. R. L. Cecil, New York.
46 *Permanent Intubation of Thoracic Aorta. A. Carrel, New York.
47 *Physiologico-Pathologic Study of Case of Heart-Block Occurring in a Dog as Result of Natural Causes. G. Bachmann, Atlanta, Ga.
48 *Pneumococcus Infection in Animals. A. B. Wadsworth, New York.
49 *Action of Immune Sera on Pneumococcus Infection. A. B. Wadsworth, New York.

45. Experiments on Islands of Langerhans.—Although the results of Cecil's study were of a negative character, the conclusions drawn from it have an important bearing on the true anatomic character of the islands. He found that neither inanition nor the prolonged injection of secretin has any noteworthy effect on the number, size or structure of the islands of Langerhans in the dog's pancreas. The islands of Langerhans in the guinea-pig's pancreas are in no way altered in phlorizin diabetes. The islands of Langerhans are not formed out of exhausted or degenerated acini, but develop from the ducts or acini with which they are often in direct continuity.

46. Permanent Intubation of Thoracic Aorta.—Carrel extirpated part of the anterior wall of the abdominal aorta of a dog, and replaced it by a piece of rubber covered with vaselin. Fifteen months after the operation, the circulation was still normal. The vessel wall was intact inside and outside of the rubber. It was found also that the circulation could take place for six days through a glass tube lying free in the abdominal aorta. Thrombosis occurred subsequently owing to displacement of the tube. Encouraged by these results, he operated on a number of dogs with the purpose of learning the precautions that must be taken in order to make the intubation successful. In all instances the operations were performed on the thoracic aorta of medium-sized dogs. The thoracic cavity was opened under ether anesthesia by the method of Meltzer and Auer, and a glass or metal tube was inserted into the lumen of the descending aorta. The tubes were straight, but their edges were slightly everted. The glass tubes were crude, their edges being often irregular and sharp. Before being used, the tubes were paraffined. As soon as the tube was inserted into the lumen of the vessel, the silk threads that had been put around the aorta previously, were tied. The ligature should be tight enough to cut the wall of the artery. This wall is easily injured. The clamps were removed and the circulation was reestablished through the intubated segment. Generally there was no hemorrhage from the incision through the aortic wall and in some cases the opening was not closed. In others it was sutured with fine silk. The pleura was sutured along the aorta. Before closing the thoracic cavity, slight compression was made on the trachea in order that the lungs might regain their normal size. The muscles and then the skin were united by continuous sutures.

These experiments have shown that under certain conditions aortic blood can flow through a glass tube for more than three months without the occurrence of an obliterative thrombus. If the aortic wall was lacerated, a deposit of fibrin took place, and caused a partial or complete occlusion of the tube or of the vessel. The success or failure of the intubation depended on the presence or absence of laceration of the vascular wall. Carrel suggests that the use of a tube of proper caliber, form and composition, for instance, a smooth edged, gold tube of relatively small caliber, would be followed by better results. It is possible also to line the tube with a vein in order to prevent more surely the occurrence of a thrombus.

47. Heart-Block in Dog.—What is believed to be the first known case of heart-block arising in a dog as a result of an ingenerate pathologic lesion is reported by Bachmann. The auriculoventricular dissociation was of that degree known as relatively complete block and became apparent on section of the right vagus nerve. Stimulation of the peripheral end of the cut vagus failed to inhibit the ventricles, although complete inhibition of the auricles occurred. The same results were obtained during the ventricular acceleration produced by strophanthin, so that the failure of the vagus to inhibit the ventricles is not due to the latter's infrequent action, but more probably to a normal lack of direct chronotropic influence on the ventricular muscle. These findings are similar to those obtained by Erlanger in experimental heart-block. To small repeated doses of strophanthin injected intravenously the heart reacted as follows: (a) irregular slowing of the auricles and conversion of the relatively complete into an absolutely complete a-v block; (b) a rise in the irritability of the cardiac muscle manifested by a rapidly progressing auricular and ventricular frequency, the ventricular frequency surpassing ultimately the auricular frequency; (c) complete arrest of the auricles, the ventricles continuing at their high rate; (d) sudden fibrillation of the ventricles and shortly afterward arrest in diastole.

There were found post-mortem myxomatous-like thickenings at the free edge of the septal tricuspid leaflet and at the attached margin of the posterior aortic leaflet and along part of the right anterior aortic leaflet. There was also a grayish patch on the right side of the auricular septum above the auriculoventricular junction. The thickenings at the edge

of the valves consisted of dense, circumscribed masses of what appeared to be new connective tissue. The same tissue was found pressing against the bundle along the greater part of its course. There was considerable fatty infiltration of the auricular musculature immediately above the bundle and, to a slight extent, of the bundle itself. The fibers of communication between the auricular muscle and the node of Tawara were relatively few as compared with those of the normal heart.

48. **Pneumococcus Infection in Animals.**—In summing up the results of his investigations Wadsworth calls attention in particular to the facts that dead pneumococcus culture material does not contain the active poisons formed in infection by living pneumococci. Characteristic lesions are not induced by dead cultures. But substances are present in the pneumococcus cells, and especially in culture filtrates free from pneumococcus cells, that give rise to an immunity in which the poisons of virulent pneumococci are inactive. In immune sera specific agglutinative, precipitative, lytic and opsonic activities are present. But to the action of immune sera, virulent pneumococci are singularly insusceptible. This is due chiefly to qualities acquired by the organisms during their propagation through animals. In the test-tube this insusceptibility is overcome only under exceptional conditions which destroy these qualities or neutralize their effects. Lysis may be brought about by inhibition of growth and phagocytosis by loss of virulence. In the tissues inhibition of growth and resistance to the poisons of the pneumococcus are brought about, but in ways more subtle if less exceptional, for both lysis and phagocytosis are active factors in the recovery of certain animals from infection.

49. **Action of Immune Sera on Pneumococcus Infection.**—From the results of his study of the action of immune sera on pneumococcus infection Wadsworth says it is evident that immune sera vary greatly in their curative value. Immune sera possess protective action, but protective action is not necessarily indicative of curative action. Sera from animals immunized with dead pneumococcus cells which had been washed free from their products, failed to exert materially greater curative action than normal sera. Sera from animals immunized with culture filtrates free from pneumococcus cells possessed, in some instances, a slight curative value, but often this curative action was not apparent. In animals actively immunized, however, the presence of an immunity to culture filtrates was readily demonstrated. In the immunity produced by injections of dead culture material the strength was not sufficiently exalted for the sera to possess a practical curative value. It was only after immunization with virulent living cultures that the blood-serum acquired marked curative action. After pneumococcus infection in the rabbit had become established, treatment with this serum induced crisis and cured the animals. Since the recovery of animals from pneumococcus infection differs in no essential from that of man, since the unaided protective mechanism of man as compared with that of susceptible animals is exceptionally efficient and since it is possible by treatment with sera from animals highly immunized with living cultures of virulent pneumococci to cure pneumococcus infection in the most susceptible animals, Wadsworth says it is difficult to conceive of the infection in man failing to yield similarly to the administration of such sera.

Old Dominion Journal of Medicine and Surgery, Richmond, Va.

June, XIV, No. 6, pp. 349-413

50 Management of Tubercular Hip Disease. W. Moncure, Raleigh, N. C.
51 Some Cases of Neuritis and Neuralgia of Varied Type and Causation. F. W. Sinkler, Philadelphia.
52 Case of Lymphatic Leukemia. F. H. Smith, Abingdon, Va.

Southern California Practitioner, Los Angeles

June XXVII, No. 6, pp. 257-312

53 Malta Fever in Arizona. Report of Cases. C. E. Yount and R. N. Looney, Prescott, Ariz.
54 Practice in Mexico. J. V. Gaff, Los Angeles.
55 Posture and Neurosis. C. E. Reynolds, Los Angeles.
56 Esophagoscopy for Removal of Foreign Bodies. W. P. Millspaugh, Los Angeles.
57 Nurse as a Citizen. S. A. Simons, South Pasadena.
58 Tubercles of Chorioid. G. C. Armstrong, Los Angeles.

Lancet-Clinic, Cincinnati

June 29, CVII, No. 26, pp. 695-722

59 *Colloid-Chemical Analysis of Absorption and Secretion. M. H. Fischer, Cincinnati.
60 Serum Therapy in Tetanus. A. P. Cole, Cincinnati.
61 Causes and Surgical Relief of Intestinal Stasis and Ptosis of Colon. J. E. Pirrung, Cincinnati.
62 Procrastination in Diseases of Eye. K. L. Stoll, Cincinnati.

July 6, CVIII, No. 1, pp. 1-26

63 *Acute Edema of the Kidney. A. D. Dunn, Omaha.
64 Case of Transient Blindness, Complete in One Eye, Partial in the Other, with Double Optic Neuritis. H. F. Hansell, Philadelphia.

July 13, CVIII, No. 2, pp. 27-54

65 Physical Welfare of Policyholders. E. L. Fisk, New York City.
66 Amebic Dysentery. W. Scott, Loveland, Ohio.
67 Schiötz's Tonometer. K. L. Stoll.

59. **Colloid-Chemical Analysis of Absorption and Secretion.**—Absorption and secretion are defined by Fischer as mirror images of each other, not alone because the one process is the biologic reverse of the other, but because the conditions that favor the one, hinder the other, and vice versa. After reviewing the evidence which shows that no essential difference exists between absorption and secretion in a multicellular organism, it is pointed out that all which remains to characterize absorption and secretion in the multicellular organism is its one-sided character, that the intestine is, for example, (predominantly) an absorbing organ, while the kidney is (predominantly) a secreting one. This difference between the behavior of any unicellular organism and the individual absorbing or secreting cell of a multicellular organism is brought into connection with the fact that while the former is surrounded on all sides by the medium, the latter is in contact with different media at different parts of its protoplasm. Absorption and secretion in the former represent the single attempt of getting into equilibrium with the one medium surrounding it; in the latter, the attempt to get into equilibrium with two or more mediums. Out of the latter grows the fact that absorption and secretion in the higher animals occur predominantly in one direction. The fact is emphasized that the absorption or the secretion of any solution is never a single process, it is the composite of the absorption or the secretion of the solvent plus the absorption or the secretion of each individual substance dissolved in that solvent.

It is pointed out that the absorption of the solvent, the water, from the injected solutions is identical with the absorption of water by such emulsion colloids as fibrin or gelatin when these are exposed to the same external conditions. Peritoneal absorption is next shown to be parallel point to point with absorption from the intestinal tract, and both of these are then shown to be the mirror image of secretion as occurring from the kidney. Evidence is adduced to show that the formation of lymph is analogous to the secretion of urine. The absorption and secretion of dissolved substances, and their selective character, are held to be dependent on the unequal distribution of the dissolved substances between, what we may call broadly speaking, three phases (water, secretion or absorbing tissues, blood) that constitute every absorptive or secretory system in one of the higher animals; and it is pointed out how this is entirely analogous and explainable on the same grounds as are inequalities observed in the distribution of dissolved substances between three such phases as water, a solid colloid and a liquid colloid.

The prevailing theories of absorption and secretion are touched on in brief, reviewed and criticized. Filtration is held to be of no real interest in the problem under physiologic conditions. Diffusion is looked on as of fundamental importance both in the matter of determining the rate of absorption and secretion and their character, though owing to the colloid constitution of living matter diffusion does not appear in as pure a form in biologic material as in a homogeneous solvent. The osmotic conception of water absorption is cast aside. It is briefly indicated how experiments which are designed to support "physiologic," "secretory" or "vitalistic" conceptions of absorption or secretion do not do so, but are interpretable in the terms of the colloidal theory of water absorption and the inequalities in the distribution of dis-

solved substances between the various phases constituting the absorptive or secretory system. As of greatest value in the theoretical formulation of the problem are held certain scattered remarks to the effect that imbibition plays a rôle in the process of absorption (von Wittich) and the clearer experimental demonstration of this fact by Hamburger; and in the problem of secretion Hofmeister's clear-cut expression of the truth that secretion of fluid into the intestine under the influence of the saline cathartics is identical with the loss of water by swollen gelatin plates when immersed in solutions of these same salts.

63. **Acute Edema of Kidney.**—The parenchymatous nephritides, acute and chronic, parenchymatous degenerations, cloudy swelling, etc., are regarded by Dunn as being essentially edemas, and hence symptomatic of an underlying cause. The immediate cause is excessive acid accumulation or acid production in the kidney. The treatment must be directed toward neutralizing this acid and removal of the source or cause of the increased acidity. The hypertonic saline-alkaline treatment is an effective, though a symptomatic treatment. The colloidal conception of "nephritis" makes imperative the search for the underlying causes of the acidity. In differentiating acute edemas of the kidney accompanied by pain from stone, the value of blood incorporated in casts as a diagnostic point is suggested.

Journal of South Carolina Medical Association, Seneca

June, VIII, No. 6, pp. 149-186

68 Inguinal Hernia, Operative Treatment *vs.* the Truss. C. F. Ross, Anderson.
69 *Low Ureteral Calculus, Operation, Recovery. A. B. Knowlton, Columbia.

69. Abstracted in THE JOURNAL, June 15, p. 1891.

Vermont Medical Monthly, Burlington

June 15, XVIII, No. 6, pp. 131-156

70 Diagnosis and Management of Epidemic Variola. C. S. Caverly, Rutland.
71 Towne Method for Drug Habitues. W. F. Waugh, Chicago.
72 Few Points Gained from Use of Cystoscope. W. B. Thorning, Houston, Texas.
73 English Translation of Secondary Effects of Salvarsan. E. Finger.

New York Medical Journal

July 6, XCVI, No. 1, pp. 1-52

74 *Rotation Treatment of Scoliosis. A. M. Forbes, Montreal, Canada.
75 Gastric Crises of Tabes. J. Friedenwald and T. F. Leitz, Baltimore.
76 Neurasthenia in the United States. J. M. Taylor, Philadelphia.
77 Facial Paralysis Complicating Suppurative Otitis Media; Atypical Mastoid Operation. E. Amberg, Detroit.
78 American and European Medical Schools. A. L. Soresi, New York.
79 Acute Anterior Poliomyelitis. F. E. Butler, New York.
80 Maternal Nursing. W. M. Hartshorn, New York.
81 Treatment of Chancroids. R. M. Toll, Scranton, Pa.

July 13, XCVI, No. 2, pp. 53-100

82 *Direct Treatment of Syphilitic Diseases of the Central Nervous System. H. F. Swift and A. W. M. Ellis, New York.
83 Indications for Removal of the Faucial Tonsils. H. Hays, New York.
84 Study of Infant Mortality in Rochester; the Relation of Market Milk Thereto. J. R. Williams, Rochester.
85 Physical Welfare of Policyholders. E. L. Fisk, New York.
86 *Mixed Vaccines in Septic Conditions. W. R. Thomson. Warsaw, N. Y.
87 Roentgen Therapy in Acne. M. K. Fisher, Philadelphia.
88 Cryptogenetic Sepsis Treated with Autogenous Vaccine. A. Orenstein.
89 Curiosities of Hindu Medicine. B. P. Bharâti, Calcutta, Bengal.

74. **Rotation Treatment of Scoliosis.**—Describing the pathologic changes of scoliosis, Forbes says: There is a prominence of the ribs on one side posteriorly, and at the same time there is a bulging of the ribs on the other side anteriorly. Scoliosis is more than a deformity of the spinal column. It is a deformity of the trunk, and especially of the thorax as a whole. Pathologic scoliosis may be simulated by a physiologic change in the form of the trunk due to attitude, and in order to understand pathologic scoliosis it is necessary to understand the relationship which it bears to physiologic scoliosis. Every attitude is either one of strain or non-strain. If one bends to the left side, the ribs on the left side become more prominent posteriorly, and flattened laterally. Thus in certain attitudes the thorax is in a position simulating the deformity of scoliosis, and further, if the patient remains in this pseudoscoliotic position long enough he will tend to become deformed—pathologic scoliosis will be produced. The aim of the treatment suggested by Forbes is to place the thorax in a position as far as possible from the abnormal by the production of physiologic scoliosis on the reverse side to the pathologic scoliosis, and to maintain it in this position, that the forced change of form and function of the thoracic parietes may be followed by certain definite changes in their external conformation. He describes in detail the apparatus used and method employed.

82. **Treatment of Syphilis of Central Nervous System.**—There is considerable evidence that the blood-serum of treated syphilitics has curative powers. For the past eight months, Swift and Ellis have been studying the therapeutic effect of such serums when injected intraspinously into patients with tabes and other syphilitic affections of the central nervous system. At first the serum was obtained by withdrawing blood from the patient on the day following a salvarsan treatment. Gradually the time has been shortened so that now the blood is withdrawn an hour after the intravenous injection of salvarsan or neosalvarsan. They have used the serum of syphilitic patients to make serum agar culture media for the growth of *Treponema pallidum* after Noguchi's method. Cultures in media made with serum obtained before treatment grew practically as well as in that made with normal serum, while in media made with serum obtained an hour after intravenous injections of salvarsan, the spirochetes developed much more slowly or not at all. In media made with serum obained in six to twenty-four hours after treatment, the growth approximated that in normal control tubes. From these experiments it seems that the serum has the greatest inhibitory action shortly after the injection of salvarsan.

The results of some of these treatments are as follows: Four tabetics had received repeated intravenous injections of salvarsan, in addition to mercurial treatment, with resulting symptomatic improvement and reduction in the cell count in the spinal fluid. On instituting intraspinous injections of their own serum obtained shortly after intravenous injections of salvarsan, the cell count promptly fell to normal, the globulin decreased in amount much more rapidly than previously, and in two of the patients the Wassermann reaction in the spinal fluid became negative, even when 0.5 c.c. of fluid was used. In the other two patients the treatment had little effect on the Wassermann reaction. Another patient with tabes was treated from the beginning by combined intravenous and intraspinous methods. With five treatments in two and a half months, there was a drop in cells in the spinal fluid, from 130 to nine, a disappearance of the Wassermann reaction in the spinal fluid, and considerable decrease in globulin. During this time there was also symptomatic improvement.

The authors feel that their results up to the present are of sufficient value to warrant a continuation of the work and its institution on a larger scale. Doubtless the best results can be obtained from the intravenous treatment with salvarsan or neosalvarsan, combined with intraspinous injections of the patient's own serum, possibly with the addition of small amounts of neosalvarsan.

It is hoped that the treatment here outlined will be of aid in these forms of syphilis, the treatment of which has formerly been so unsatisfactory.

86. **Mixed Vaccines in Sepsis.**—Thomson feels that there can be no question of a doubt that several of his cases would have ended fatally if the vaccines were not given. In all of his cases he has used the stock mixed vaccines, of *Streptococcus pyogenes, Staphylococcus pyogenes aureus, Staphylococcus pyogenes albus, Staphylococcus pyogenes citreus, Bacillus coli communis, Diplococcus pneumoniæ.* The initial dose was always one half of the vial or 375,000,000 bacteria. The mixed vaccines were used because he had no time for reports on cultures, and also because he felt that in at least some of these cases there was a great probability of a mixed infection. The injections were given on the first day that infection was evident, except in one case.

New Orleans Medical and Surgical Journal

July, LXV, No. 1, pp. 1-112

90 Parasitic Amebæ of Man and their Relation to Disease. C. F. Craig, Washington, D. C.
91 Tonsils and General Health. W. Scheppegrell, New Orleans.
92 What General Practitioner Should Know About the Nose. P. J. O'Kelley, New Orleans.
93 Ear as a Complication of General Manifestations of Disease. R. C. Lynch, New Orleans.

Maryland Medical Journal, Baltimore

July, LV, No. 7, pp. 157-182

94 What is Maryland Doing in Her Fight Against Tuberculosis? F. H. Heise, Baltimore.

Medical Record, New York

July 6, LXXXII, No. 1, pp. 1-46

95 De Keating-Hart Method of Fulguration. W. S. Bainbridge, New York.
96 *Relations of Calcium to Pretuberculous States, Arteriosclerosis, and Insanity. C. F. Disen, Minneapolis.
97 *Advantages and Disadvantages of Plaster-of-Paris as a Fixative Apparatus. R. Hammond, Providence, R. I.
98 Indicanuria and the Proteins. J. C. Warbrick, Chicago.
99 Innocent Colon Bacilli in Urines. A. Bassler, New York.
100 *Differential Diagnosis of Pulmonary Tuberculosis. I. P. Starr, New York.

July 13, LXXXII, No. 2, pp. 47-92

101 Indications for Operations in Diseases of the Digestive Tract. M. Einhorn, New York.
102 Immigration of the Tuberculous into the United States. A Problem for Every Nation. S. A. Knopf, New York.
103 Anesthesia in Submucous Resection of the Septum Nasi. J. Allan, Liverpool, England.
104 Visual Acuity and the Montessori Method of Instructing Children. S. H. Brown, Philadelphia.
105 Study of Folie a Deux, with Report of a Case. W. A. Boyd, Westport, Conn.
106 What Part Should the General Practitioner Take in the Campaign for the Conservation of Vision. P. B. Hough, New York.
107 An Unusual Case of Tabes with Toxic Complications in the Etiology. T. A. Williams, Washington, D. C.

96. Calcium, Arteriosclerosis and Pretuberculous States.—Is there any relation between arteriosclerosis and pretuberculous states or tuberculosis? This question Disen answers in the affirmative. He says: In practice we are interested in early arteriosclerosis, mainly of the gouty type, which again is found in the heavy meat-eater, the sedentary, or in the hard laboring man: he appears as the opposite of the pretuberculous, enjoys a good appetite for fat as well as for other foods, and usually gives the idea of a robust farm-bred or overfed person. The pretuberculous, on the other hand, with an innate disgust for fat, gives us the picture of a city-bred, delicate or neuropathic individual. The physician at a glance recognizes each class. So, at least a *prima vista*, we have two distinct types among humanity, viz.: the antituberculous and the pretuberculous; denoting respectively the gouty and those descending from tuberculous ancestry or otherwise being predisposed to tuberculosis.

Arteriosclerosis is considered to consist primarily in a degeneration of the tunica media, effected by high tension. This, again, is caused by overwork and strain, bodily or mental, or by anything constricting the arterioles, as nitrogenous materials in excess of needs or with deficient excretion. Omitting the numerous other causes of early arteritis as tobacco and other vasoconstricting poisons, exogenous and endogenous, it seems that in the gouty type the difficulty is principally due to mechanical strains or nitrogenous excess. As we all know, arteriosclerosis does attack the tuberculous after some time, but the rationale of the pathogenesis is of a different nature. We here have, besides denutrition, vasodilatation, giving diminished tension, and although agreed that arteriosclerosis depends on mechanical strain on the media, possibly interfering with the vasa vasorum, we would take exception in the case of tuberculosis. As arteriosclerosis first attacks the part of the media with no vasa vasorum, and this part as well as the intima is nourished by imbibition from the main blood-stream, it must be plausible that in tuberculosis with vasodilatation the arteriosclerotic changes must be operated by direct imbibition of toxin, independently of either tension or interference with the vasa vasorum. Also in the pretuberculous arteriosclerosis develops under circumstances very different from those connected with the gouty type.

A deficiency of calcium is held by Disen to be responsible for these conditions and the therapy he advocates rests on this basis.

97. Plaster-of-Paris As a Fixative Apparatus.—The recent work of some Italian and German surgeons seems to indicate that in using plaster-of-Paris dressings in the rachitic deformities of the legs, a softening of the bones takes place, so that at the end of four to six weeks, the leg can be easily moulded into a corrected position. This is accomplished without giving an anesthetic and without performing an operation. It is rather startling to be made to realize that a plaster bandage, which we have applied in the firm belief that it aided in producing solid union and calcification, should really cause the bones to soften and the lime salts to disappear. When we consider the evidence, however, Hammond says, the truth of the assertion is convincing. It is well known that in taking a Roentgen plate of a limb which has been in plaster for several weeks, the bone shows much increase in radiability throughout its textures, due to disappearance of lime salts. This occurs in a healthy as well as a diseased or fractured bone. It has been observed for many years in our hospital wards that if children were allowed to walk after the legs had been in plaster for a few weeks, the bones bent, showing that softening had occurred.

Hammond has recently treated cases of bowlegs, especially those of the anterior type or saber deformity, by the use of plaster to obtain softening of the bones. At first he followed Anzoletti's method, and applied the plaster before attempting to correct the deformity. More recently he has given ether first, and corrected the deformity manually as much as possible. The correction gained at the first sitting may be only slight, but by changing the plaster at intervals of two weeks, the ultimate correction is obtained just as well and in a shorter space of time. This method is, of course, more applicable in young children with pliable bones. Osteotomy and osteoclasis are preferable in older children and in cases where the bone is sclerotic.

100. Differential Diagnosis of Pulmonary Tuberculosis.—From Starr's figures it would seem that the commonest condition to be mistaken for pulmonary tuberculosis is chronic bronchitis associated with emphysema. His experience, however, leads him to believe that the association of these two conditions is much more frequent than its recognition. Thus, while in the series of cases analyzed by him there were fifty-three cases of chronic bronchitis and emphysema discharged as not tuberculous, there were twenty-four cases of pulmonary tuberculosis complicated by chronic bronchitis and emphysema, separately or in combination. The difficulty in excluding tuberculosis in these cases is due to the variety rather than the deficiency of physical signs. In a chest full of râles and presenting the emphysematous type of resonance and breath sounds it is sometimes difficult or impossible either to detect or to exclude tuberculosis, however suspicious the symptoms or history. Often only a positive sputum after a number of negative examinations decides the question. Contrary to the older teaching, the two conditions seem to occur together with comparative frequency. That these 519 nontuberculous cases were not easy of recognition or differential diagnosis, Starr says, can be attested by the fact that the majority of the patients were sent through other clinics and from competent observers. The only conclusion to which a study of these cases has brought Starr is the familiar and often repeated caution not to base a diagnosis hastily on insufficient data or too brief a period of observation.

Albany (N. Y.) Medical Annals

June, XXXIII, No. 6, pp. 315-376

108 Duty of Family Physician in Management of Surgical Cases. J. M. L. Finney, Baltimore.
109 Pathology of Lungs. E. Kellert, Albany.
110 Diagnosis of Diseases of Lungs. C. B. Hawn, Albany.
111 Roentgen Rays in Examinations of Chest. A. F. Holding, Albany.
112 Surgery of Lungs. J. H. Gutmann, Albany.

New Mexico Medical Journal, Las Cruces

June, VIII, No. 3, pp. 271-296

113 Preventive Medicine. E. D. Strong, El Paso, Texas.
114 Blood-Pressure. T. Merrill, Colorado, Texas.
115 Chronic Diarrhea. E. C. Prentiss, El Paso, Texas.

Boston Medical and Surgical Journal

July 4, CLXVII, No. 1, pp. 1-36

116 Remote Metastases Following Cancer of the Breast. J. C. Hubbard, Boston.
117 Blood and Stool Examinations in a Company of Philippine Scouts. E. S. Tenney, Cotabato, Mindanao, P. I.
118 Theories as to the Causation of Monsters. C. J. Kickham, Brookline, Mass.
119 Suppurations of the Urinary Tract. H. Terry, Providence, R. I.
120 Suppurations of the Urinary Bladder. H. C. Pitts, Providence, R. I.
121 Suppurative Lesions of the Kidney and Ureter. O. C. Smith, Hartford, Conn.

July 11, CLXVII, No. 2, pp. 38-72

122 *Cancer of the Uterus. F. Cobb, Boston.
123 Surgical Treatment of Cancer of the Uterus. C. A. Porter, Boston.
124 Advantages of Abdominal Hysterectomy. F. B. Lund, Boston.
125 *Hopeful Aspects of Cancer of the Uterus. W. P. Graves, Boston.
126 Another Conception of Anaphylaxis. W. M. Barton.
127 Means of Determining the End Results of Operations on Hospital Patients. C. C. Simmons, Boston.

123. **Cancer of Uterus.**—In the eleven years from 1900 to 1910 inclusive, 306 patients with cancer of the uterus were admitted to the Massachusetts General Hospital, including cases of cancer of the cervix and cancer of the body of the uterus. By far the great majority of the cases are squamous cell disease of the cervix, with a small number of cases of cancer of the body. In discussing the radical operation and the late results, cases of cancer of the cervix have been distinctly separated from those of the body of the uterus. Cobb's statistics corroborate what is already known in regard to the relation of age, heredity and pregnancy to cancer of the uterus. The greatest number of cases were between the years of forty-one and forty-five. The youngest patient was twenty-one. In 9 per cent. there was a family history of cancer.

Of the 306 cases, fifty-two were inoperable in the opinion of the surgeons who examined them, and 148 were thought unsuitable for anything but a palliative operation; in other words, 200 cases, or almost two-thirds, came to the hospital too late, an operability of 35.2 per cent. Of these Cobb has been able to follow to the fatal end 133. The usual early symptom was irregular hemorrhage. This was present in 130 cases. Pain in the pelvis and back is said to be the first symptom in fifty-three. Loss of weight and strength in seven. Some foul discharge in thirty-nine.

Vaginal hysterectomies, fourteen. Immediate mortality, nothing. Three cases cancer of the body, no cures. Eleven cases cancer of the cervix, of which eight were traced. Cures, two, or 25 per cent.

Abdominal hysterectomies for cancer of the fundus, 21; immediate mortality, 4, or 19 per cent. Of the 17 patients that survived the operation, 16 have been traced. Five are alive and without recurrence five to eight years after operation, a percentage of cures of 31.2.

Abdominal hysterectomies for cancer of the cervix, 71. Squamous cell, 70, adenocarcinoma, 1. In forty-nine cases, an ordinary hysterectomy, with no attempt at dissection of the ureters or pelvis, was the operation; in twenty-two cases a more or less radical dissection was done. Of the forty-nine in which no attempt was made to widely remove the parametrium, seventeen died as a direct result of the operation, an immediate mortality of 34.6 per cent. Of the thirty-two who survived the operation, twenty-nine have been traced, four are alive without recurrence for more than five years, a percentage of cures of 13.7 per cent.

In the twenty-two more or less radical hysterectomies there were five deaths, an immediate mortality of 22.7 per cent. All of the seventeen surviving patients were traced. Five are alive and well and free from recurrence from five to eleven years, a percentage of cures of 29.4 One patient (a successfully completed Werder operation) lived over eleven years and now has probable recurrence in the pelvic bones.

The cause of death in the abdominal hysterectomies was in the majority of cases septic peritonitis; shock was the next most frequent cause.

126. *Id.*—Graves has operated in thirty-one cases of cancer of the uterus. Of these, thirteen were cases of adenocarcinoma of the body. In this series of thirteen cases of adenocarcinoma, there were no deaths, and there are at the present date no recurrences. These operations were spread over a period of between five and six years. Graves has operated in eighteen cases of cancer of the cervix by the extended operation through the abdominal route. Among these eighteen cases of cancer of the cervix, there were two deaths resulting from the operation, making a primary mortality of 11 per cent. Both patients died from shock. Besides these two primary deaths, there have been six deaths from recurrence. Out of the eighteen cases, ten patients are well without recurrence. Of these patients one was operated on four years ago, three were operated on three years ago, one was operated on two years ago, three were operated on over one year ago, while two were operated on within six months. Graves has made it a practice to do the radical operation in every case in which there is the slightest possibility of extirpating the uterus and vagina. Many of the cases in his series were far advanced. The ten patients who are well without recurrence, most of them were fairly favorable, and Graves is confident that most of them are permanently cured, although no statement as to cure can be made before the five-year limit. There has been no sepsis in any of the thirty-one cases, excepting a stitch abscess. There were two cases of vesico-vaginal fistula, one of which healed spontaneously, and one case of fecal fistula which has not healed.

Wisconsin Medical Journal, Milwaukee

June, XI, No. 1, pp. 1-38

128 Important Points in Diagnosis of Tuberculosis. F. M. Pottenger, Monrovia, Cal.
129 Early Diagnosis of Pulmonary Tuberculosis. O. W. McMichael, Chicago.
130 Typhus Fever. Case Occurring in Milwaukee. A. P. Patek, Milwaukee.

Journal of Michigan State Medical Society, Battle Creek

July, XI, No. 7, pp. 401-470

131 Prophylaxis and Management of Cardiovascular Diseases. M. A. Mortensen, Battle Creek.
132 Pre-Eclamptic Toxemia. W. E. Weis, Detroit.
133 Treatment of Puerperal Eclampsia. A. Deenhouts, Holland.
134 Newer Methods of Diagnosis of Kidney and Bladder Lesions. C. V. Brown, Detroit.
135 Tuberculous Laryngitis. G. H. McFall, Detroit.
136 Remuneration of Physicians. J. L. Irwin, Detroit.

St. Paul (Minn.) Medical Journal

July, XIV, No. 7, pp. 325-378

137 Asepsis, Antisepsis and Listerism; Ancient, Medieval, Renascent and Modern. J. Knott, Dublin, Ireland.
138 Effects of Tobacco Smoking on Cardiovascular System. J. S. Gilfillan, St. Paul, Minn.
139 Treatment of Surgical Infections. F. J. Savage, St. Paul, Minn.
140 Etiology of Toxemia, Septicemia, Pyemia. A. E. Comstock, St. Paul, Minn.
141 Nature of Infections, General Reaction. E. M. Jones, St. Paul.
142 Complications of Senile Enlargement of Prostate. F. R. Wright, Minneapolis.

Journal of Maine Medical Association, Portland

July, II, No. 12, pp. 861-896

143 Intratracheal Etherization. A. Ehrenfried, Boston.
144 Diagnosis and Treatment of Gall-Stones. W. M. Spear, Rockland.
145 Gall-Stones. H. H. Purinton, Kennebunk.
146 Country Physician as Surgeon. W. E. Sincock, Caribou.

FOREIGN

Titles marked with an asterisk (*) are abstracted below. Clinical lectures, single case reports and trials of new drugs and artificial foods are omitted unless of exceptional general interest.

Edinburgh Medical Journal

June, VIII, No. 6, pp. 481-576

1 Ataxia: Symptom. J. J. G. Brown.
2 *Acute Myelocythemia Associated with Osteosclerosis and Other Unusual Features in Infant. A. Goodall.
3 *Delirum Due to Bromid. D. K. Henderson.
4 *Soaps and Their Effects on Skin; Analytic Research. F. Gardiner.
5 Insufficient Data as Cause of Faulty Interpretation of Radiographs. A. McKendrick.

2. **Acute Myelocythemia.**—A case of myelocythemia in an infant of ten weeks is described by Goodall in which a fatal termination occurred in three weeks. The case appears to be the third on record in which leukemia has been associated with osteosclerosis. There was considerable difficulty in staining the myelocyte granules.

3. Delirium Due to Bromid.—The case which Henderson reports is somewhat complicated by the fact that from time to time the patient has had petit mal seizures. The relation, however, of the bromid which he was taking to the delirium seems to be sufficiently clear to warrant making the diagnosis of bromid delirium. The delirium was characterized by confusion, hallucinations of sight and hearing, misidentification, restlessness and retrograde amnesia. Quite a striking feature in the mental picture was the grandiose trend, and that, associated with the physical signs, e. g., sluggish pupils, thick speech, difficulty in writing, exaggerated tendon reflexes and tremors, made Henderson think at first that the case was one of general paralysis. That diagnosis, however, was ruled out from the fact that the examination of the cerebrospinal fluid, except for a partially positive globulin reaction, was negative, that the Wassermann reaction with the blood-serum was negative, and that such a rapid recovery took place both mentally and physically on withdrawal of the bromid.

4. Soaps and Their Effects on Skin.—From Gardiner's experiments it may be concluded that all soaps, from their chemical constitution, must be irritant to the normal skin. The effect varies with the individual skin, and is more pronounced in senile and diseased skins. Cotton-seed oil and other and rancid fats are probably largely responsible for the irritant effects in cheaper soaps. They are much more commonly used now than in former years. Gardiner thinks that the first mentioned is, uncombined, a skin irritant, but this is a matter for further inquiry. The bactericidal power of soaps is *nil*, and even when combined with antiseptics they are of no value as germicides. There may be some reason for the introduction of such substances as sulphur and ichthyol into soaps because of their effects on the glands and blood-vessels of the skin, but, clinically, antiseptics, and, above all, phenol, increase irritation. There is no scientific basis for the addition of extra fat to soaps, as when soap is mixed with water the alkali freed will at once unite with the superfluous fat. Rosin and impurities have no significance from the present standpoint, but paraffin and benzene derivatives, when incorporated with soaps for cleansing purposes, increase the harmful effect on the skin. The minimum of soap should be employed and it should be well washed off.

Dublin Journal of Medical Science

June, III, No. 486, pp. 401-480

6 Treatment of Congenital Dislocation of Hip; Six Cases. W. C. Stevenson.
7 Muscular Dystrophy. J. Craig.
8 Teaching of Anatomy. T. G. Moorhead.
9 Bacterial Symbiosis. J. C. Johnson.

British Journal of Children's Diseases, London

June, IX, No. 102, pp. 241-288

10 *Mucous Gastritis in Infancy. E. Cautley.
11 Dermato-Myositis in Child, with Pathologic Report. F. E. Batten.
12 *Pneumococcal Peritonitis in Children. H. C. Cameron.

10. Mucous Gastritis in Infancy.—In the treatment of mucous gastritis Cautley has not found lavage of great value, except as a temporary expedient for a few days at a time. Sometimes it appears injurious. Nevertheless he recommends it as a measure worthy of trial in all cases in which there is much mucus secreted, using an alkaline lotion for the purpose either once or twice a day. In some cases the frequent administration of small doses of lime-water, bicarbonate of soda or citrate of soda is more beneficial. The diet, he says, must be simple and easily digestible. Cow's milk is curdled very readily, increasing the vomiting and distress. He has obtained the best results from sweet whey powder, a dram in 2 ounces of water providing a mixture analytically identical with freshly made whey. It is simpler to prepare than whey and differs from it in some biologic or chemical characters, for it does not so constantly produce the green stools passed by infants fed on whey.

All infants, he finds, are lacking in the antiscorbutic properties of fresh milk. In mild cases diluted peptonized milk can be tried. Asses' milk sometimes agrees. As soon as the worst symptoms have subsided and the secretion of mucus has diminished, small quantities of cream are gradually added to the diet. The diet of cream and whey is gradually replaced by peptonized milk, and then by milk and water or barley-water. Milk-sugar is preferable to cane-sugar. The latter is apt to increase the catarrh. Citrated milk can be tried when recovery is well advanced. Alcohol is contra-indicated, except in emergencies. Bismuth, especially the liquor of bismuthi, is occasionally beneficial, but is more often disappointing. Cautley attaches far more importance to diet than to drugs, except in so far that alkalies help to dissolve the mucus and enable it to pass more easily through the pylorus.

12. Pneumococcal Peritonitis in Children.—The treatment of pneumococcal peritonitis commonly advised is by immediate laparotomy and the establishment of drainage. Against this procedure as an invariable practice Cameron urges the following objections: (1) In pneumococcal peritonitis there exists no focus of infection which can be extirpated as in appendicitis. In those cases in which there is an acute local enteritis, and they appear to be relatively uncommon, the condition of the gut is not such as to encourage attempts at excision. (2) The peritonitis is always in the first instance a diffuse general peritonitis involving the whole peritoneal cavity to its furthest recesses. Such a general infection renders efficient drainage almost an impossibility. (3) It is by no means certain, even if it were possible to drain off the exuded lymph, that it is wise immediately to attempt to do so. The lymph not improbably has a protective function and diminishes the absorption of toxins. In what Cameron has called the second stage of the illness, which coincides with the copious exudation of lymph, there is often in favorable cases an amelioration of all toxemic symptoms. (4) The disease in the early stages is essentially a septicemia and the danger is in proportion to the virulence of the general infection. Death may occur within a few hours of the time at which the local infection of the peritoneum takes place and while the peritoneum itself is involved to but a small extent. (5) In some instancess patients have been allowed to survive the acute peritonitis and the septicemia in their own homes without operative interference, and have presented themselves with a residual abscess, usually subdiaphragmatic, drainage of which has been followed by a complete recovery. In these cases the diagnosis has commonly been in the early stage that of appendicitis, or pneumonia, or typhoid; in a later stage tuberculous peritonitis is simulated.

To compare with these Cameron examined the results of immediate laparotomy at Guy's Hospital. Eight patients admitted in the acute stage, for one reason or another, were not operated on before death. In seven of these, pleurisy, pneumonia, peritonitis or endocarditis or a combination of these were present as well as peritonitis. The eighth patient died as soon as admitted. Twelve patients were immediately submitted to laparotomy. Nine of these died, four on the day following operation, the remainder within a few days. Three patients recovered, but in none is it possible to trace any immediate benefit from the operation. All passed through a long and tedious illness, marked by a persistent high temperature and rapid pulse, developed in convalescence the signs of abdominal abscess, and only recovered after a second operation by which the pus was evacuated. No patient recovered as a result of immediate laparotomy without the formation of residual abscesses and without the necessity for a second operation. Such a clinical course presents a close analogy with the train of events in pneumococcal septicemia with the more usual localization in the lung followed by an empyema.

For these reasons Cameron thinks that, although ultimately laparotomy and drainage of a residual abscess almost invariably become necessary, it is unwise to submit all patients to immediate laparotomy as a matter of routine. No doubt there are many cases in which at the onset the violence of the toxemia is such that early death occurs under any circumstances, whether laparotomy is performed or not. There are others in whom unnecessary and premature interference is able to turn the scale against recovery. He suggests that in most cases the better plan is to wait, to place the patient

in a sitting posture, to apply ice to the abdomen, to give morphin and to endeavor to combat toxemia by saline infusion.

Journal of Laryngology, Rhinology and Otology, London

June, XXVII, No. 6, pp. 297-352

13 Contribution to Serum and Vaccine Therapy in Treatment of Intracranial Complications of Middle-Ear Suppuration. A. L. Turner.
14 Examination of 1,050 Skulls. Some Points in Surgery of Ear and Nose. W. S. Syme.
15 Method of Detecting Fixation of Stapes. F. P. Sturm.

Practitioner, London

June, LXXXVIII, No. 6, pp. 761-902

16 *Hemophilia. Sir T. Oliver.
17 Treatment of Some Emergencies in Urinary Surgery Met with in General Practice. H. Lett.
18 Non-Malignant Stricture of Rectum. P. L. Mummery.
19 Intracranial Mechanism in Health and Disease. T. B. Hyslop.
20 *How Far Is Trauma a Possible Factor in Production of Disease? A. J. Hall.
21 Treatment of Placenta Prævia. W. F. Shaw.
22 Present State of Organotherapeutics. J. Dardel.
23 Vicious Circle as Cause of Sudden Death. J. B. Hurry.
24 When to Operate in Permeating Mastoid Meningitis. J. B. Pike.
25 Prognosis of Diphtheria. A. Harris.
26 Case of Morphinomania. W. K. Anderson.

16. **Hemophilia.**—The internal administration and the subcutaneous or rectal injection of epinephrin, ergot, hammamelis and calcium salts, etc., have been recommended in hemophilia, but Oliver has not observed any striking results follow the administration. In the case of a boy 5 years old, who had been bleeding for nearly forty-eight hours from a smalll wound inside the lower llip caused by a fall on a fender, the injection of horse serum by the rectum very rapidly and permanently arrested the hemorrhage. In other cases, equally good results were obtained.

20. **Trauma in Production of Disease.**—That many pathologic conditions owe their inception to trauma is a belief defended by Hall. He says that trauma may play a more or less important contributory part in precipitating various morbid conditions of the central nervous system. A neuropathic tendency, inherited or acquired, is usually preexistent in such cases. Trauma may similarly contribute to the occurrence or exacerbation of various diseases due to known microorganisms, such as tuberculosis, pneumonia, etc., either by increasing the activity of the organism, or by reducing the resistance of the host. How far trauma can stimulate the formation or development of tumors is uncertain, but that it may do so there is considerable evidence to show.

Journal of Tropical Medicine and Hygiene, London

May 15, XV, No. 10, pp. 145-160

27 Case of Trypanosomiasis Treated in Livingstone Hospital During 1911. G. W. Ellacombe.
28 *Numerous Cases of Edema of Legs and Albuminuria Occurring in a Reformatory, with Contribution to Study of Bilharziasis. E. F. Bour.

28. **Edema of Legs and Albuminuria.**—Edema of the legs and albuminuria occurred among many of the boys in a reformatory and were ascribed to a combination of ptomain absorption, an over-large salt ration, and bilharzia. Forty-four per cent. of the inmates were found by Bour to have bilharziasis and a strict prophylaxis was enforced. Researches were undertaken concerning the ova and larvæ of bilharzia. No evolution of the miracidium was detected in water, where it died after some forty-eight hours. In the human serum, the miracidium threw out globular buddings of a granular aspect, which may be sporacysts. This transformation was never observed in media other than serum. The prophylaxis in the reformatory was directed against the infection from the miracidium through the cutis, and especially self-reinfection through the prepuce or the meatus. It has now been established for five months and since its beginning 30.8 per cent. of the boys who previously had bilharzia do not now show any ova in their urine after centrifugalization.

Glasgow Medical Journal

June, LXXVII, No. 6, pp. 401-475

29 *Antityphoid Inoculation. Sir W. B. Leishman.
30 Analysis of One Hundred Consecutive Cases of Stricture of Gullet. W. Downie.
31 Estimation of Sugar in Urine. H. H. Green.
32 Pathography of Julian Dynasty. F. Kanngiesser.

29. **Anti-Typhoid Inoculation.**—The conclusion Leishman has come to with regard to the use of typhoid vaccine in the treatment of actual cases of enteric fever is that it is a most valuable means of treatment and that the vaccine therapy of these general infections will in time prove of great use. His experience in treatment was that small doses did no harm, but, at the same time, did no good. The dose was then increased from 50 to 100 millions every third day, with which excellent results have been obtained. All who had to do with the patients thought they had benefited greatly. The enteric facies disappeared, the patients said they felt better, and, in two or three cases, they even asked that the vaccine should be repeated. Also, it seems to reduce the size of the spleen and to increase the flow of urine, which is thought to be a favorable sign. Shortening of the fever is difficult to judge. As to the temperature, the result of vaccination is to raise the temperature in the following twenty-four hours about 1 F. over what might have been expected; but it soon falls, and to a 1 degree lower point than before inoculation. About the third day after inoculation it tends to rise again; another injection is given, and the same result follows. And, finally, the temperature touches normal, and remains there. As to the relative advantages of using a stock vaccine or an autogenous vaccine Leishman thinks stock doses appear inefficient, and, as far as our present knowledge goes, he would recommend starting at a dose of 50 millions, and cautiously increasing it to 100 or 150 millions. In his opinion the vaccine treatment of enteric fever is sound practice, and will grow in favor as time goes on.

Archives des Maladies du Cœur, etc., Paris

June, V, No. 6, pp. 369-432

33 The Myocardium During Inanition. J. Heitz.
34 *Leukocytolytic Treatment of Pneumonia. (La leucocytolyse et sa valeur dans la pneumonie.) J. J. Manoukhine.

34. **Leukocytolytic Treatment of Pneumonia.**—This article is part of an extensive study of the behavior of the leukocytes in various acute infections. A number of Russian authors and others have called attention to the gradual lowering of the resisting power of the leukocytes by the third day of pneumonia until it is much below normal by the time of the crisis. The leukocytes succumb in consequence to the action of the bacterial toxins, and the substances set free by disintegration of leukocytes start the production of antibodies. Manoukhine describes the technic with which he has determined this in his research on thirty-seven pneumonia patients, and he has utilized the information thus learned in treatment of pneumonia. As the leukocytes are broken up, the pneumococci feel the toxic action of the bactericidal elements thus released and become weak and attenuated, so they fall a prey to the phagocytes. The course of the pneumonia process can be traced in this way by study of the blood; first a hyperleukocytosis, then, commencing about the third day, marked leukocytolysis and then marked phagocytosis. In the five cases which terminated fatally, the total absence of leukocytolysis foretold the fatal outcome, as also the lack of bactericidal and antitoxic properties in the blood-serum. The high mortality of pneumonia in the aged and in drinkers corresponds to the diminished power of elaborating leukocytolysins, antitoxins, etc. The aim in treatment should be to stimulate leukocytolysis, and here the Russians and others have obtained encouraging results by reinjecting the heated blood taken from the same patient, with or without admixture of salt solution, or taken from convalescents, or injections of metallic ferments or of extracts of rabbit leukocytes, or musk or spermin, etc., or prepared serum. Manoukhine himself used leukocytes taken from 7 c.c. of the patient's own blood, killed by freezing and thawing out, suspending the leukocytes in 1 c.c. of physiologic salt solution. He gives some tracings of the results of this leukocytotherapy which open encouraging prospects. He thinks the organism is better able to take care of its own elements when reinjected

than of any elements which are of an alien nature, so his method answers all the indications with the least strain on the organism. But any means of stimulating the leukocyte-producing organs to more active functioning and of promoting leukocytolysis will answer the purpose. The only problem now, he says, is to ascertain the simplest and most innocent means of accomplishing this.

He gives a detailed description of the simple technic he applied in estimating the extent of the destruction of leukocytes in a Wright capillary pipette.

Archives de Médecine des Enfants, Paris

June, XV, No. 6, pp. 401-480

35 Dwarf Growth with Defective Bone and Muscle Development; Six Cases. (Dystrophie ostéo-musculaire avec nanisme. Rachitisme tardif, amyotrophie et impotence musculaire, obésité et retard des fonctions génitales.) V. Hutinel and P. Harvier.
36 *Abscesses in or Back of the Tonsils. (Traitement des abcès amygdaliens et retro-pharyngiens.) J. Comby.
37 *Diatheses in Children. (Les diathèses infantiles.) G. Schreiber.
38 The "Blue Spot" in the Sacral Region. (La tache bleue sacrée dite mongolique.) A. Bruch.

36. Abscess in or Back of the Tonsils.—Comby calls attention to the advantages of opening such abscesses with a grooved sound or probe, or even the finger, rather than with a cutting instrument. The fear of hemorrhage or injury of other organs from the use of the bistoury leads us to defer the operation as long as possible, which is a mistake. By using a blunt instrument this danger is avoided, while the procedure is just as effectual. The sound passes into the abscess as easily as into butter and the opening is then enlarged with hemostatic forceps. He reports six cases to show how this technic frees the operation from all its dangers.

37. Diatheses in Children.—Schreiber shows that the exudative diathesis is merely a new name for the old conception of the gouty tendency in children—infantile arthritism. The primary manifestations of it occur in the skin, mucous membranes and lymph organs and glands, but an array of secondary nervous disturbances are liable to manifest themselves sooner or later, and Rosenstern has recently called attention to hypereosinophilia as a constant phenomenon in all children with the exudative diathesis. When the lymph apparatus is predominantly involved the condition might be called lymphatism. Such children are peculiarly exposed to lesions of the skin, mucosæ and lymph apparatus. When these lesions are the work of ordinary microbes they run a rapid course, but when the tubercle bacillus is involved the course of the attenuated tuberculosis is torpid and protracted, corresponding to the old picture of scrofula. As the diathesis is hereditary, the marriage of persons with a similar diathesis should be discountenanced. During pregnancy, special care should be paid to hygiene, and the children should be watched for the first manifestations of trouble in skin, mucosa or lymph apparatus, with treatment as they develop. The main point in prophylaxis and treatment is the diet, and this has to be tentatively regulated in the individual cases. Comby permits eggs, vegetables and cooked fruits and salads; Czerny excludes even eggs and milk. A change of scene is often of wonderful benefit, eczema or asthma vanishing when the child is sent to the country or the mountains; the seaside is particularly useful when the lymph apparatus is mainly involved. A course of mineral waters on the spot may also prove useful, as also arsenic and cod liver oil. But the iodids should be avoided as although they have an unmistakable action on the lymph apparatus, yet they induce hyperemia and are thus liable to produce disturbances in the skin and mucous membranes.

Lyon Médical, Lyons

June 2, XLIV, No. 22, pp. 1185-1252

39 Estimation of the Blood-Pressure. (La mesure de la tension artérielle dans la pratique médicale courante.) L. Gallavardin. Commenced in No. 21.
40 *Non-Suppurative Encephalitis. (L'encéphalite non suppurée.) L. Bériel.

June 9, No. 23, pp. 1253-1308

41 Solid Basis of Serotherapy in Tuberculosis. (Applications des conquêtes sur l'immunité à la clinique de la tuberculose.) Teissier and F. Arloing.
42 *Chronic Ulcer of the Bladder. (2 cas d'ulcère simple chronique de la vessie.) Desgouttes and Reynard.

40. Non-Suppurative Encephalitis.—Bériel maintains that there is a diffuse non-suppurative encephalitis showing clinical symptoms quite distinct from those of localized brain lesions and also from those of functional psychoses. He cites a case of his own. The patient was a woman of 41, with severe headaches for some years and later periods of somnolence. For twenty days before admission to hospital she had been in bed in a somnolent state, only rarely rousing; admitted as a typhoid case, but the microscopic findings at necropsy showed it to be a case of diffuse, non-suppurative, non-hemorrhagic encephalitis, probably alcoholic in origin. He describes the findings in detail. The dominating symptom in the case was a gradually progressive annihilation of the cerebral functions—a sort of asphyxia of the brain, such as is characteristic of the encephalitis of sleeping-sickness. Bériel urges a further study and discussion of similar cases in order to distinguish them clinically from purely functional encephalopathies, on one hand, and from general infectious diseases antecedent to brain lesions, on the other.

42. Chronic Ulcer of the Bladder.—Desgouttes and Reynard report two cases of ulcer of the bladder. The first was in a woman of 27 who for four years had had frequent painful micturition, hematuria and occasionally passed gravel in urine, the symptoms increasing in severity. She was sent to the hospital with a diagnosis of vesical calculus but cystoscopic examination showed an ulcer, nearly as large as a silver quarter, on the median line on the posterior bladder wall. The second patient was a woman of 46, who had suffered for twelve years from frequent painful micturition without hematuria or gravel. Symptoms had commenced after a difficult labor for which she was anesthetized. Both patients were operated on by suprapubic incision in the Trendelenburg position and excision of the ulcer, with complete recovery in both cases. Tuberculosis was suspected in the first case from the histologic examination but animal inoculation was not tried. Inoculation was negative in the second case. These ulcers offer a favorable prognosis if diagnosed and operated on early. Extremely careful cystoscopic examination is necessary for an early diagnosis.

Presse Médicale, Paris

June 19, XX, No. 50, pp. 525-532

43 The Arthritic Diathesis. (L'arthritisme—diathèse d'anaphylaxie.) J. Galup.
44 Acquired Hemolytic Jaundice. (Ictère hémolytique acquis avec hypocholestérinémie.) P. Oulmont and L. Boidin.

June 22, No. 51, pp. 533-548

45 Physical and Chemical Properties of Organic Fluids. (Applications de la physico-chimie à l'étude des liquides de l'organisme. Cryoscopie, Conductivité. Pression osmotique.) A. Javal and Boyet.

Revue de Chirurgie, Paris

April, XXXII, No. 4, pp. 535-684

46 *Action of Chloroform on the Adrenals. (Chloroformisation et capsules surrénales.) P. Delbet, A. Herrenschmidt and A. Beauvy.
47 Fractures of the Ankle. (Les fractures du cou-de-pied.) E. Quénu and P. Mathieu. Commenced in No. 1.
48 Anatomic Classification of Thyroid Tumors. L. Bérard and H. Alamartine.
49 *Tumors of Multiple Structure. (La notion de tumeur mixte.) P. Nadal.
50 Successful Arteriovenous Anastomosis. (Traitement de la gangrène d'origine artérioscléreuse des membres inférieurs au moyen de l'anastomose artérioveineuse.) I. M. Glasstein.

46. Action of Chloroform on the Adrenals.—Delbet and his coworkers state that both experimental and clinical research since 1909 has confirmed anew the fact that chloroform has a special affinity for the adrenals and checks their functioning. The logical conclusion is that epinephrin should be given with the chloroform to tide the patient past the stage of defective functioning of the adrenals, while they are suffering from the effects of the anesthetic. These effects are responsible for operative shock, they think, in many cases and for sudden quiet death in coma after an operation, when all seems

do be doing well. Delbet injects 0.0004 or 0.0006 gm. epinephrin subcutaneously and has found that it renders the general anesthesia more regular, does away with operative shock, and, he is convinced, will render less frequent sudden postoperative fatalities. If the patient is much prostrated, he sometimes repeats the dose of epinephrin the following day.

49. **Mixed Tumors.**—Nadal regards the mixed tumor as an organized syndicate of tissues, and malignant degeneration assumes this same character of organized concerted action by the malignant tissue syndicate. He remarks that the classic theories that have prevailed to date in regard to mixed tumors have reached their menopause, and they should make way for young and fruitful theories.

Semaine Médicale, Paris

June 19, XXXII, No. 25, pp. 289-300

51 Constitutional Tendency to Secrete and Retain Excess of Water. (Hydrosyntasie et hydrophilie; considérations sur la pathogénie de l'oedème, de la phlegmatia alba, de l'obésité, etc.) H. Iscovesco.

June 26, No. 26, pp. 301-312

52 Symptoms of Auto-Intoxication from Gangrene of Ovarian Tumor. (Les accidents d'auto-intoxication consécutifs à la gangrène des tumeurs ovariennes par torsion du pédicule.) R. de Bovis.

Berliner klinische Wochenschrift

June 17, XLIX, No. 25, pp. 1165-1212

53 *Emotional Factors in Disease of Organs with an Internal Secretion. (Ueber die ätiologische Bedeutung psychischer Insulte bei Erkrankungen der Blutdrüsen.) A. Münzer.
54 *Early Diagnosis of Primary Lung Tumors. A. Ephraim.
55 *Syphilis of the Heart. (Beitrag zur Syphilis des Herzens.) G. Orkin.
56 Diagnosis of Echinococcus Disease of the Lungs. (Zur Diagnose des Lungenechinococcus.) P. Hampeln. (Ueber spezifische Antikörper bei Echinokkenkranken.) O. Thomsen and G. Magnussen.
57 Changes in Tubercle Bacillus in and Outside of the Body. (Veränderungen der biologischen Eigenschaften des Tuberkelbacillus ausserhalb und innerhalb des Organismus.) E. A. Lindemann.
58 Radium Emanation and the Blood. (Blutanreicherung mit Radiumemanation und Messmethodik.) P. Lazarus.

53. **Emotions in Causation of Disease.**—Münzer presents arguments to show that worry, fright and similar emotions induce more or less organic change in the brain. This is the primary result of the emotional stress; the effect of these changes in the brain may be felt in the glands with an internal secretion. The central mechanism regulating the secretion being out of order, the functioning of the glands suffers in turn. He thinks that we have every reason to assume that this explanation applies to certain of the pathologic states in the ductless glands which are known to have developed after emotional stress.

54. **Early Diagnosis of Lung Tumors.**—Ephraim states that in four cases in the last year he was able to diagnose a tumor in the lung by direct bronchoscopy. In two of the cases roentgenoscopy and night sweats suggested pulmonary tuberculosis, and in another case several features pointed to tuberculosis, but roentgenoscopy was negative. In the fourth case local endobronchial measures cured the bronchitis and revealed that the suppuration persisting at one point was due to ectasia from a carcinoma in the depths of the right bronchus. The patient was a man of 47; after excision of the protruding portion of the tumor conditions returned clinically to normal and the general health showed notable improvement. After removal of the obstruction, the suppuration behind it dried up. The early diagnosis of a tumor prevents useless courses of treatment for assumed tuberculosis, and endobronchial removal of protruding parts or possibly of the whole tumor is usually of great benefit. In each of Ephraim's four cases the hemorrhages which had been frightening the patients did not recur after excision or cauterizing of the protruding parts. Kahler has reported a case in which he removed a papillary cylinder-celled carcinoma from the right bronchus under bronchoscopy and there has been no sign of recurrence during the two and a half years to date. A supplementary tracheotomy might render the tumor more accessible. Another possibility opened up by early bronchoscopic diagnosis of tumors in the lungs is that of effectual radiotherapy. Radium could easily be applied to act on a mediastinal tumor.

55. **Syphilis of the Heart.**—Orkin has been analyzing the records of ninety-four cases of heart disease at the Charité public hospital, Berlin. Syphilis was positive or probable in twenty-eight of the fifty-nine men and in seventeen of the thirty-five women. In several of the women nothing was known of syphilitic infection, so that the positive Wassermann reaction was the first clue to the nature of the heart affection. Four of these women were between 20 and 30 and six between 30 and 40. Orkin does not include in the list cases of pronounced valvular defect, nephritis, exophthalmic goiter or heart trouble of thyroid origin. Excluding these, he found syphilis certain in 35.8 per cent. of the total ninety-four; 30.5 per cent. among the men and 50 per cent. among the women. A sudden onset of the myopathy, especially in the young, angina pectoris, recurring fleeting edema at the ankles, should suggest syphilis, and the Wassermann test will clear up the case. Treatment of the syphilis, if commenced in time, before irreparable lesions have developed, may arrest the process, and it always helps. Symptomatic measures may be useful, but specific treatment is the chief and urgent indication.

Deutsches Archiv für klinische Medizin, Leipsic

CVI, Nos. 5-6, pp. 411-602. Last indexed June 15, p. 1886

59 Bacterial "Partial Toxins." (Ueber Partialgifte im Bakterieneprotoplasma.) H. Lüdke.
60 Viscosity of the Blood in Healthy and Anemic Japanese. (Ueber die Viskosität des Blutes bei gesunden und anämischen Japanern, mit bes. Berücksichtigung der Beziehung derselben zu dem Nonnengeräusch.) J. Matsuo.
61 Goose Flesh. (Klinische Untersuchungen über das Auftreten der Cutis anserina.) H. Koenigsfeld and F. Zierl.
62 *Adams-Stokes Disease and Bradycardia. (Klinische und anatomische Beiträge über Adams-Stokes'sche Krankheit und Vagusbradykardie.) D. Gerhardt.
63 Research on Circulation Through Non-Breathing Regions of Lung. (Durchblutung nicht atmender Lungengebiete.) R. Hess.
64 Action of Cold on Circulation in the Lungs. (Wirkung der Kälte auf den kleinen Kreislauf.) R. Hess.
65 Psychic and Chemical Influencing of Gastric Secretion. (Ueber die Bedeutung der freien HCl für die Pepsinverdauung und über die psychische und chemische Beeinflussung der Magensekretion, nebst Bemerkungen über die Indikatorenmethode zur HCl-Bestimmung.) G. Ewald.
66 Ferments in Living Isolated Loop of Small Intestine. (Fermentuntersuchungen an einer isolierten menschlichen Dünndarmschlinge und deren Bedeutung für einige neuere Pankreasfunktionsproben.) H. Schlecht and G. Wittmund.
67 Modified Resistance of Red Corpuscles to Saponin in Various Diseases. (Ueber die Saponinresistenz der roten Blutkörperchen des Menschen bei verschiedenen Krankheiten.) J. Heuberger and W. Stepp.
68 Blood Changes in Various Forms of Anemia. (Ueber die Häufigkeit basophil gekörnter und polychromatophiler Erythrocyten bei verschiedenen Anämien.) H. Wichern and F. Plotrowski.
69 *Chronic Jaundice with Chronic Splenomegaly. (Ueber chronischen acholurischen Ikterus mit chronischer Splenomegalie.) L. Lichtwitz.
70 Fever from Destruction of Blood-Plates. (Ueber Fieber durch Blutplättchenzerfall.) H. Freund.
71 *Influence of Forced Feeding on Oxidation Processes. (Einfluss langdauernder, starker Ueberernährung auf die Intensität der Verbrennungen im menschlichen Organismus—Untersuchungen bei Mastkuren.) E. Grafe and R. Koch.
72 Resistance of Red Corpuscles to Hypotonic Salt Solutions After Splenectomy. (Resistenz der roten Blutkörperchen gegenüber hypotonischen Kochsalzlösungen bei entmilzten Hunden.) L. Pel.

62. **Adams-Stokes Syndrome and Bradycardia of Vagus Origin.**—Gerhardt reports three cases with typical Adams-Stokes attacks, in the first two of which post-mortem examination showed marked changes in the bundle of His, and in the third a tumor which pressed on but did not involve the vagus. The first patient had been free from attacks for over six years when he came under observation; the clinical symptoms would last only a few days and in the intervals he felt well. During the attacks complete heart block; ratio of venous and arterial pulse 3 to 1; between attacks pulse slow and regular. The patient also had an old callous stomach ulcer and the Adams-Stokes attacks were generally coincident with bleeding from the stomach. There was also sclerosis of the coronary arteries, most marked on the left. In the second case there was a calcareous area, evidently of long standing, encroaching on both branches of the bundle of His, entirely cutting off the left branch in places, but there were no clinical symptoms until three months before death. At first only slight attacks of dizziness, then typical Adams-Stokes attacks and finally frequent changes from normal pulse to partial or total heart block. It is noteworthy

that the attacks improved under epinephrin, but that complete dissociation first occurred while it was being administered. In the third case an inoperable carcinoma of the parotid region caused the attacks by the pressure of the tumor when the head was bent backward. Graphic pulse curves were not obtained and there was no visible pulsation in the neck, so Gerhardt is not certain whether it was heart block or only slowing of the entire heart, but thinks the latter more probable. The attacks improved under atropin. He mentions another case in which attacks were brought on by emotional disturbances but no microscopic examination was made of the bundle of His. He thinks that attacks of real heart block are not caused by vagus stimulation alone, but that there is either myocarditis involving the ventricle or some undetected lesion of the bundle of His.

69. **Chronic Acholuric Jaundice with Chronic Splenomegaly.**—Lichtwitz reports two cases of long standing jaundice with good general health. Physical examination showed enlarged liver, enormous enlargement of spleen, and the blood-picture of a severe anemia, with occasional myelocytes and myeloblasts, nucleated reds and eosinophilia. In the first case the patient, a girl of 17, had been chlorotic for three years. The second patient had had jaundice since birth, as also his grandfather. Lichtwitz says he has found forty-three similar cases in the literature, twenty-seven of which were congenital cases and thirty-three familial. He calls attention to the fact that though the skin was jaundiced and bilirubin was present in the blood-serum, no bilirubin was excreted in the urine. This suggests as a possible explanation that the skin discoloration may be due not to bile pigment but to some product of hematin from the broken-down blood-cells.

71. **Effect of Long Continued Overfeeding on Metabolism.**—Grafe and Koch report two series of tests carried on for fifty-four days in one case and fifty-one in the other. Tables are appended showing in detail the increase in weight, nitrogen-balance, changes in temperature and pulse and variability in oxidation at different periods in the experiments. His results show in general that there was marked increase in weight at first, later much less increase in weight for a given amount of food and greatly increased oxidation, as shown by respiration tests. It is probable, however, that different individuals have a different capacity for adapting themselves to changes in the amount of nourishment, and that this adaptability depends on the inherent differences in their cells with regard to oxidation.

Deutsche medizinische Wochenschrift, Berlin

June 20, XXXVIII, No. 25, pp. 1169-1216

73 *Gangrene of the Lungs as Complication of Gastro-Intestinal Operations. (Die Lungengangrän als Komplikation nach ausgedehnten Magen- und Duodenumresektionen.) H. Coenen.
74 Chronic Otitis Media and Cholesteatoma. P. Manasse.
75 Anaphylactoid Phenomena with Repeated Injections of Salvarsan. (Ueber die "anaphylaktoiden Erscheinungen" bei wiederholten intravenösen Salvarsaninjektionen.) W. Wechselmann.
76 Roentgenotherapy of Climacteric Hemorrhage. (Behandlung klimakterischer Blutungen mittels Röntgenstrahlen.) E. Runge.
77 *Improved Technic for Examining the Cerebrospinal Fluid. (Eine neue Methode zur Untersuchung der Lumbalpunktate.) H. Braun and Husler.
78 Diagnosis of Brain Lesions. (Zur Diagnostik organischer Gehirnerkrankungen.) M. Raether.
79 Roentgenoscopy of Intermittent Hour-Glass Stomach. (Ueber intermittierenden Sanduhrmagen.) E. Klose.
80 Medical Moving Pictures. (Ueber medizinisch-photographische und kinematographische Aufnahmen.) A. E. Stein.

73. **Postoperative Gangrene of the Lung.**—Coenen remarks that the complications on the part of the lungs liable to develop after extensive operations on the stomach or intestines may be due to the anesthetic, to disturbances in the circulation, to infection, or to embolism. A process tending to gangrene seems to be particularly liable after resection of the stomach or intestine. At the Breslau clinic in charge of Küttner, this occurred eight times in the last four or five years in a total of 136 resecting operations on the stomach and two on the duodenum. None of the eight patients with the complicating gangrenous process in the lung recovered. Fatal postoperative pneumonia occurred in only five patients, and fatal suppurative bronchitis in only two. The experiences from other clinics give about the same percentage of complicating gangrene of the lungs, and show likewise that it occurs most frequently after operations on the stomach. In one case there was an interval of two weeks after the operation before the gangrenous pneumonia developed; this confirms the embolic nature of the process as also the pathologic anatomic findings in some of the other cases. In two additional cases the process did not progress quite to the point of gangrene. One patient died, but the other recovered, the embolic suppurative pneumonia healing. This material indicates that postoperative gangrene and postoperative pneumonia are similar infectious processes, reaching the lungs by the bronchi or by the blood or lymph routes from the abdominal cavity.

77. **Improved Technic for Examining the Cerebrospinal Fluid.**—Braun and Husler call attention to Sachs and Altmann's hydrochloric acid method as the simplest and most reliable means of determining pathologic conditions in the cerebrospinal fluid. They relate their experiences with the test in forty-one cases, the findings confirming the value of the test. Only 1 c.c. of fluid is needed, readily obtained by lumbar puncture, and an interval of a few days does not interfere with the result. The reagent is a mixture of one part normal hydrochloric acid in 299 parts distilled water. Five volumes of the reagent to one volume of the cerebrospinal fluid gives the clearest results, the fluid becoming distinctly turbid in case of meningitis, especially the tuberculous, while normal fluid persists limpid. The proportions are thus 1 c.c. cerebrospinal fluid to 5 c.c. n/300 HCl.

Medizinische Klinik, Berlin

June 28, VIII, No. 25, pp. 1015-1054 and Supplement

81 The Modern Treatment of Syphilis. C. Bruhns. Continued.
82 *The Secondary Phase of Tuberculosis. (Ueber "sekundäre" Tuberkulose.) G. Liebermeister.
83 Pituitary Extract in Treatment of Osteomalacia. (Zur Behandlung der Osteomalacie mit Hypophysenextrakt.) C. Koch.
84 Alkaline Ionization of the Intestines. (Enterale Ionentherapie.) A. Zimmer.
85 Roentgenoscopy of Pancreas Cysts. (Zur Bewertung der Röntgenuntersuchung bei der Diagnose von Pankreascysten.) E. Schlesinger.
86 High Frequency Electric Currents in Treatment of Heart Disease. (Die Hochfrequenzbehandlung der nervösen und organischen Herz-Störungen.) P. Grabley.
87 Mendel's Laws Applied to Human Heredity. (Ueber Mendelsche Vererbung beim Menschen.) F. Hammer.
88 *The Heart and Morphin. Siebert.

82. **"Secondary Stage" of Tuberculosis.**—Liebermeister classifies the manifestations of tuberculosis as primary, secondary or tertiary, analogous to syphilis. The tertiary phase represents the localized tuberculous process; the secondary the suspects, those in the inactive phase without local findings. He has been inoculating guinea-pigs with blood from patients in the tertiary stage and obtained positive results in from 11 to 48 per cent. according to the severity of their lesions. The results were also positive in six cases of inactive secondary tuberculosis. These results confirm anew the great importance of positive findings on injection of animals, but they demonstrate also that the method is not sensitive and that negative findings are far from conclusive. On the other hand, he says, by combining Sträubli's acetic acid technic with Uhlenhuth's antiformin method, tubercle bacilli in the blood can be detected with great certainty. By this combined technic the presence of tubercle bacilli in the blood was demonstrated in all of his fifteen cases of open tuberculosis and in eleven of his thirteen closed cases. In seventy patients free from localized manifestations of tuberculosis he found acid-fast bacilli in the blood, apparently identical with the tubercle bacilli. These positive cases included thirty-seven patients with rheumatism, a number with scrofula, and others who had apparently long outgrown their scrofula. The discovery of tubercle bacilli in the blood in such a large proportion of cases increases the resemblance to syphilis, and demonstrates that secondary tuberculosis is extraordinarily frequent, but does not necessarily entail the tertiary stage. Many apparently entirely cured persons still have tubercle bacilli in their blood. The youngest child examined was 2 weeks old and the findings were positive. The fact that tubercle bacilli can circulate

in the blood while the patients have long been apparently entirely well shows that they may be entirely harmless and the bearers relatively immune to their own bacilli, but large numbers of tubercle bacilli in the blood suggest impending flaring-up of the infection. The skin manifestations of the secondary phase of syphilis are encountered in tuberculosis only in the potential stage; that is, they develop only in response to the Pirquet test or similar specific irritation. His experience with tuberculin during the secondary phase of tuberculosis has not been encouraging.

88. **Morphin in Advanced Heart Disease.**—Siebert writes from the public hospital at Hamburg, in charge of Rumpel, to extol the efficacy of morphin as an excellent tonic in advanced heart disease; it tranquilizes the patient, regulates the heart action and may even display a tendency to cure. In one of the five extreme cases reported, large doses of morphin kept up for twenty-three months restored the patient to a comparatively active life. He was a young man with advanced degeneration of the heart and valvular insufficiency after recurring acute articular rheumatism, his earning capacity entirely gone and a speedy death apparently impending. Recurring infarcts in lungs, kidneys and spleen tormented him besides. The outline of the heart was two fingerbreadths to the right of the right margin of the sternum, and the same distance to the left of the nipple line. He improved under the morphin until he was able to play ball and resume continuous light work. He was in the hospital twenty-three months, and had received daily from 0.02 to 0.09 gm. morphin during the first six months, then from 0.12 to 0.34 gm. daily for a year with progressive large doses of chloral. After in this way progressively increasing the doses, they were reduced gradually to zero in the course of the following five months, and the young man was discharged in fairly good condition. He had two recurrences of the rheumatism during the following year but compensation was maintained and the heart did not seem to suffer. There were no indications of morphin poisoning at any time, and the earning capacity has persisted unimpaired during the nearly two years since. Siebert reviews what others have written on morphin in heart disease; he is inclined to ascribe its efficacy to the breaking up of a vicious circle involving the nervous system and the heart.

Münchener medizinische Wochenschrift

June 18, LIX, No. 25, pp. 1361-1416

89 Albumin from Lymph in the Urine. (Lymphurie?) H. Quincke.
90 The Wassermann Reaction in the Cadaver. (Untersuchungen mittels der Wassermanschen Reaktion an der Leiche.) G. B. Gruber.
91 Salvarsan in Chorea. (Salvarsan bei Chorea minor.) J. Salinger.
92 Thyroid Disease of Tuberculous Origin. (Ueber Schilddrüsenerkrankungen auf tuberkulöser Grundlage bei Einstellungsuntersuchungen.) V. Hufnagel.
93 Tendovaginitis at the Styloid Process of the Radius. (Zur Frage der stenosierenden Tendovaginitis am Processus styloideus radii—De Quervain.) H. Flörcken.
94 Endothelioma of Nasal Septum. G. Trautmann.
95 *Duodenal Ulcer. (Ueber Duodenalgeschwüre.) H. Kehr. Commenced in No. 24.
96 Wassermann Reaction in Internal Medicine. (Bedeutung der Wassermannschen Reaktion bei internen Erkrankungen. Methodisches und Klinisches.) R. Massini. Commenced in No. 24.

95. **Duodenal Ulcer.**—Kehr insists that the reason why duodenal ulcer is diagnosed and operated on less frequently in Germany than in England and America is not because the Germans are less skillful in diagnosis and in surgical skill but because they believe in letting a sleeping lion lie. When gall-stones and duodenal ulcers cause absolutely no symptoms or merely slight transient trouble and subside again at once into their former latent condition, the Germans refrain from operating. At the same time, he admits that the Germans do not operate quite often enough in the cases in which operative measures are absolutely needed. The safe middle course can be learned only by the cooperation of internists and surgeons and he urges surgeons to attend the meetings of internists and internists to relate at meetings of surgeons their experiences and to be present at laparotomies. He remarks that Americans agree to an operation far more readily than German patients. When the physician says "appendicitis," it elicits in an American patient a reflex action which drives him to the surgeon at once; within two hours that patient's appendix will be in its jar of alcohol. Kehr reiterates that indiscriminate operating in all cases of duodenal ulcer and gall-stones is more dangerous, even at the best, than expectant treatment when the course of the case to date justifies delay. In reviewing his experience with ninety-four operations on the duodenum in his 954 laparotomies for cholelithiasis since 1904, he states that there was ulceration in the duodenum in only twenty-nine of the cases. He explains the "hunger pain" as the result of accumulation of bile in the gall-bladder, and its distention. When food is taken the gall-bladder empties itself by the reflex action set up at once. With duodenal ulcer there are liable to be adhesions which bind the gall-bladder and kink it as it fills up, thus inducing the hunger pain; it subsides of course as soon as the gall-bladder contents pour out. To determine the correctness of this explanation, he had a confrère with a fistula into the gall-bladder turn day into night, that is, he took his breakfast at 8 p. m., lunch at midnight, dinner at 2 a. m., supper at 8 a. m., and slept during the day. As anticipated, the outward flow of bile altered to correspond, becoming profuse during the day and scanty at night, when the bile passed into the digestive tract and was utilized in the course of digestion. Only during the hours of fasting did the bile pour out of the fistula; if there had been no fistula the bile would have accumulated in the gall-bladder with resulting distention and pain if the organ had been bound down by adhesions. Among the differential points discussed he mentions the sex; in sixteen cases of gastric ulcer there was only one male patient and only three women in his twenty-nine patients with duodenal ulcer. Two of the men with duodenal ulcer were shoemakers, accustomed to press their lasts against the epigastrium, and trauma was suspected in some of the other cases. The history of the case is more important for the diagnosis than physical examination; even when there are positive findings and symptoms, they are rarely absolutely characteristic. In one case traction from the ulcer had drawn the neck of the gall-bladder out like a diverticulum; in another the duodenal ulcer had caused colics, vomiting and chills, but the gall-bladder was sound; in another case fever and jaundice were the symptoms. In ten cases the patients had been taking all kinds of remedies and courses at spas for the assumed cholelithiasis, no one suspecting the duodenal ulcer. When an operation is done it must be radical, he emphasizes. A gastro-enterostomy alone is not enough, as he shows by a case in which the pylorus region had not been excluded (which he now regards as indispensable); gastro-enterostomy had been done three times, enterostomy twice, and part of the bowel resected, before the patient was finally cured of disturbances from an ulcer in the pylorus region.

Wiener klinische Wochenschrift, Vienna

June 20, XXV, No. 25, pp. 947-990

97 *Total Exclusion of Segment of Intestine. (Zur totalen Darmausschaltung.) K. Hochenegg.
98 *Resection of Posterior Spinal Nerve Roots. (Indikationen und Erfolge der Resektion hinterer Rückenmarkswurzeln.) O. Foerster.
99 Operative Treatment of Exophthalmic Goiter. (Zur Frage der chirurgischen Behandlung der Basedowschen Krankheit.) A. Pulawski.
100 *Electric Accidents. (Organisation und Durchführung der ersten Hilfe bei elektrischen Unfällen.) S. Jellinek.

97. **Total Exclusion of Part of Intestine.**—Hochenegg reports the case of a woman of 40 who fifteen years before had various operations performed to cure a tuberculous pelvic process. A segment of the bowel including part of the transverse colon, cecum and ileum, had been shut off from the rest of the intestines and finally was cut off and left as a sac closed at both ends. It had caused no trouble until quite recently when this blind sac became distended with secretions and their sediment, with resulting colic and stiffening of this segment until the pains were unendurable, and the whole was removed without opening. The excluded segment had been drained outward by an artificial fistula at first, but this soon became occluded. The case teaches the

necessity for implanting in the bowel one or both ends of such an isolated segment of intestine, to permit the escape of the secretions. But this method of complete exclusion from the diseased region has a number of advantages over an ordinary entero-anastomosis. In three recent cases the latter had been done by other surgeons and the complications soon compelled an emergency operation to remedy conditions.

98. **Resection of Spinal Nerve Roots.**—Foerster here brings down to date the history of the operation generally called by his name, stating that it has been done to relieve tabetic crises in forty-four cases; the resection was not extensive enough in some so that the pains recurred later; in some other cases crises developed in other nerve regions. Five of the patients died, and no benefit was obtained in three cases. Another cause for failure may be that in certain cases the vagus is responsible for the crises. Rhizectomy has been done further for spastic paraplegia in fifty-nine cases, with benefit in forty-six, no benefit in five, and eight patients died. The operation can do no good unless the disturbance is of actual centripetal origin; this excludes athetosis, chorea, convulsive tic, motor spasms, etc. The affection must be stationary or only very slowly progressive. Rapidly progressing affections contra-indicate the method. Careful oversight and training afterward are indispensable and where they are not possible the method had better not be applied. He advises to sever nerves enough to answer the purpose, but to spare always the third or fourth lumbar nerve as this is involved in the knee extension reflex.

100. **Electric Accidents.**—Jellinek gives six illustrations of resuscitation of the victim of an electric accident. They are taken from a booklet which has been adopted in the leading electric establishments, etc., of Austria. One of the new points in this booklet is that the rescuer is warned, if alone, not to leave the victim to go for a doctor. The immediate aid he can render is more important than anything else at first. The minute lost by going to seek help may transform the apparent death into actual death. Another new point emphasized is to keep the head raised; a rolled-up coat is enough for this. If the head is kept low the congestion in the brain vessels may entail additional injury. Jellinek gives an illustrated description of a little pocket insulated instrument to grasp the wire in releasing the victim; most of the instruments used by professionals for the purpose are so large that they are not always at hand, while his *Isolierzange* in its rubber guard can be conveniently carried in the pocket at all times. He commends the Silvester-Brosch method of artificial respiration as the easiest for the inexperienced, but he advises to have the head alone raised, keeping the shoulders on the ground or table and grasping the elbows, not the upper arm. The Schäfer method is not so effectual, he thinks. The pulmotor has the disadvantage, he says, that the oxygen may be forced into the esophagus as well as into the air passages, and dilate the stomach and thus harm the heart, but it is possible to avoid this by light pressure on the larynx which the layman can apply at the Adam's apple. The larynx stands the pressure without harm while it prevents the passage of air or oxygen into the esophagus. No measures besides the artificial respiration should be attempted if the rescuers have to suspend the artificial respiration to do them. The artificial respiration is the main thing. But if assistance is at hand, brushing the soles of the feet and other stimulating measures might be tried, pouring alternately hot and cold water over the chest and abdomen. Rectal injection of ice-cold water is a vigorous stimulant and he urges that a tube and vessel for the purpose should be kept on hand where electric accidents are liable to occur. If ice water is not obtainable, hydrant water may be used, injecting a pint or quart. The victim must be carefully watched to note the moment when he begins to breathe spontaneously or regain consciousness. Stimulants by the mouth are then permissible. When full consciousness is regained repose is imperative for that and the following day at least, regardless of how well the rescued individual may feel. The blood-pressure is liable to be very high after an electric accident—a vasconstrictor phenomenon—and cautious inhalation of chloroform may prove useful in bringing it down to normal. The physician must watch to see that stomach content is not forced up and into the air passages by the artificial respiration. Faradization of the phrenic nerves may be tried, as also venesection or lumbar puncture; many victims of electric accidents have an abnormally high pressure on the brain. Physicians connected with establishments where there is danger of electric accidents, should keep in the emergency kit a tongue holder, some chloroform, camphor, ether and epinephrin solutions, instruments for venesection and lumbar puncture, a Pravaz syringe, dressings, a rectal and stomach tube, and eventually have access to a faradization apparatus and pulmotor. They should also drill the employees in rescue work until every individual employee is familiar with the technic. Great progress might be realized, besides, he says, if it were possible to take a photograph at once of the conditions, victim, destroyed material, etc. Such photographs would not only promote the scientific study of the subject but would have great instructive value in prophylaxis. In conclusion Jellinek reviews the legislation in different countries and private efforts in the line of prevention of electric accidents, and mentions a number of instances in which the victim was able to save himself—in one case merely by jumping up off the ground. As soon as the contact with the ground ceased, the current no longer fastened his hands to the wire and he was saved in the moment before his feet touched the ground again.

Zeitschrift für Geburtshülfe und Gynäkologie, Stuttgart

LXX, No. 2, pp. 373-726. Last indexed, May 18, p. 1554

101 Displacement of Organs in Chest by Ovarian Tumors. II. (Veränderung des Situs der Brustorgane durch Riesenovarialtumoren.) W. Rübsamen.
102 Determination of Age of Fetus. (Ueber Altersbestimmung des Fötus auf graphische Methode.) T. Heuser.
103 Influence on Vagina of Medicated Vaginal Douches. (Einfluss medikamentöser Scheidenspülungen auf die normale und pathologische, nicht puerperale Scheide.) O. Polano.
104 Appendicitis Following Salpingitis. (Wurmfortsatzveränderungen nach Tubenentzündungen.) E. Moritz.
105 Abortion. (Klinische und bakteriologische Beiträge zur Lehre vom Abort.) O. Bondy.
106 Pelvis Deformed from Osteomalacia in Youth. (Ueber ein Erwachsenenbecken nach chronisch-juveniler Malacie.) H. Hinselmann.
107 Staphylococci in Genital Passages of Normal Parturients. (Ueber die Staphylokokken in den Geschlechtswegen normaler Schwangerer.) R. Amersbach.
108 *Pseudo-Eclampsia. O. Polano.
109 *Tuberculosis of Genital Organs and Peritoneum; 100 Cases. A. Labhardt.
110 Adenomyositis of Uterus and Rectum. H. Renisch.
111 Changes in Liver During Pregnancy. (Die anatomischen Veränderungen der Leber in der Schwangerschaft.) P. Heinrichsdorff.

108. **Pseudo-Eclampsia.**—Polano calls attention anew to cases presenting the syndrome of eclampsia but which prove to be abortive pneumonia or poisoning from other cause. Two patients were recently brought to his service (Würzburg) in one afternoon with the diagnosis of eclampsia and the symptoms sustained this assumption. Necropsy failed to show in the first case the lesions characteristic of eclampsia. The urine distending the bladder was free from albumin, and some arsenic was found in the liver. The woman had been taking arsenic and morphin powders for a nervous affection and had probably mistaken the powders, or possibly the ordinary dose may have had a toxic influence on account of the pregnancy and exceptional debility. In the second case, the eclamptic lesions were accompanied by bacteriemia, swarms of Gram-positive cocci being found in certain vessels. The findings resembled those recently reported by Raubitschek as liver necrosis following childbirth. Polano is inclined to regard the bacteriemia as the primary affection, causing a syndrome simulating true eclampsia.

109. **Gynecologic Tuberculosis.**—Labhardt's hundred cases of tuberculosis of the genital organs or peritoneum or both, 1900-1910, teach the importance of individualizing treatment, combining conservative and operative measures as indicated. An operation is scarcely advisable in the severe cases with complications and mixed infection, as evidenced by high fever. It is not needed further in the mildest cases, as the tuberculosis rapidly improves under conservative measures. If these fail, then operative treatment should be advised. Fever always renders the outlook graver. The operation should be

as radical as possible, avoiding contaminating the abdominal cavity or wound with tuberculous material. With tuberculous peritonitis alone, conservative measures should be the rule. If there is much ascites the fluid should be evacuated by a laparotomy, not puncture; this permits oversight of the ovaries and tubes. The laparotomy must not be regarded as a certain cure in itself, not even in the form with effusion. The experiences with injection of camphorated oil before and during the operation have been encouraging to date. None of the patients died from the genital tuberculosis but tuberculous peritonitis may prove fatal alone. The patients generally succumb to the progress of tuberculous processes elsewhere, in the lungs, as a rule. The results reported seem to indicate that the removal of the pelvic focus permits recuperation and checks metastasis. Of the ninety-eight patients followed to date, 71.5 per cent. of the fifty-seven women operated on are still living and 54.8 per cent. of those treated with conservative measures; all but 5 per cent. of the first and 14 per cent. of the second group have their earning capacity unimpaired. The symptoms of genital tuberculosis resemble those of any affection of the adnexa; pain is the rule, more or less spasmodic as the tubes contract. Adhesions also induce pain, increasing as the acute phase of the onset subsides. Fever was noted in 50 per cent. of the cases; more frequent and higher when the peritoneum was involved. About 20 per cent. of the nonfebrile patients have died and 50 per cent. of those with fever.

Zentralblatt für Chirurgie, Leipsic

June 15, XXXIX, No. 24, pp. 809-840

112 *Improved Technic for Suture of Transverse Abdominal Incision. (Zur Erleichterung der Naht beim queren Bauchschnitt.) O. Sprengel.
113 *Management of Knee After Resection. (Die Nachbehandlung der Kniereseküon unter Anwendung der Schienenschraubenkontension.) K. Kolb.
114 *Operation for Perforated Gastric and Duodenal Ulcer. F. Hölscher.

112. **Technic for Suture of Transverse Abdominal Incision.**—Sprengel first draws the lips together in the center and holds them with one stout mattress suture on the median line. Then the peritoneum incision is sutured on each side. Then three wide mattress sutures are taken through the muscles and skin on each side but are not tied until the ends of the suture material are drawn up tight together, thus coaptating the lips the entire length at once, tying then each suture separately.

113. **Screw Contention of Knee After Resection.**—Kolb writes from Wilms' service to describe with illustrations the stout screws driven horizontally into the bone above and below the knee and the strong adjustable frame fitting over them and immobilizing the joint, used at the clinic during the last year with gratifying results. The screws pass entirely through the leg and the frame stands so high above the knee that it does not interfere with dressing or massage of the part. The apparatus has been applied in eight cases to date and consolidation occurred in the most favorable manner in all. The aim is the exact reverse of extension.

114. **Rapid Treatment of Perforated Gastric or Duodenal Ulcer.**—Hölscher commends the views of those who advise not to waste time in careful suture of a perforated ulcer when the general condition is too menacing, but to run a suture thread around the opening and draw it up and then tampon and conclude with gastro-enterostomy, if at all feasible; that is, if the condition of the heart permits. He reports two cases of gastric and three of duodenal ulcer in which he applied this technic and always with the best results, the patients being still free from disturbances to date, over two years in most. The edges of the ulcer must be freshened, and he lays great stress further on the necessity for suturing the ulcer to the anterior abdominal wall. This reduces the size of the persisting morbid area and allows superficial tamponing. The simpler the conditions left, the easier it is to bring the intestines back to normal functioning. In one of his cases the patient required gastro-enterostomy later, and the primary ulcer was found entirely healed. The region had worked loose from the abdominal wall with which it was connected only by one short, thin band.

Zentralblatt für Gynäkologie, Leipsic

June 15, XXXVI, No. 24, pp. 761-792

115 Outcome of Posterior Colpotomy for Inflammation in Ovaries or Tubes. (Resultate operativer Behandlung entzündlicher Adnexerkrankungen mittels Kolpotomia posterior.) J. W. C. van Kesteren.
116 Local Anesthesia for Anterior Colpohysterotomy. (Zur Anwendung der Lokalanästhesie und der lokalen Suprareninanämisierung bei der Kolpohysterotomia anterior.) H. Thaler.
117 Atresia of Esophagus. (Fall von blinder Endigung des Halsteiles des Oesophagus mit Kommunikation seines Brustteiles mit der Luftröhre.) A. Müller.
118 Formation of Artificial Vagina. (Schubert'sche Scheidenbildung und Bericht über einen weiteren Fall.) Flöel.

Zentralblatt für innere Medizin, Leipsic

June 15, XXXIII, No. 24, pp. 597-620

119 Calcium Metabolism During Constipation and Diarrhea. (Kalkstoffwechsel bei Obstipation und Durchfall.) F. Krone.

June 22, No. 25, pp. 621-644

120 *Improved Technic for Test for Occult Blood. (Eine Modifikation der Guajakprobe.) L. de Jager.
121 Formol-Urea Test for Organic Fluids. (Ueber Sedimentierung mehrerer Körper mittels Formolharnstoff.) L. de Jager.
122 Improved Technic for Jager's Test for Sugar. (Eine Modifikation der von mir beschriebenen Zuckerprobe.) L. de Jager.

120. **Modified Technic for Guaiac Test for Occult Blood.**—Jager says that the ordinary Weber-van Deen test is rendered much more sensitive if a few drops of solution of sodium hydroxid or ammonia are added to the ether extract before starting the guaiac test. This renders the blue tint much more distinct, while the reaction seems more specific.

Gazzetta degli Ospedali e delle Cliniche, Milan

June 16, XXXIII, No. 72, pp. 753-768

123 Differential Diagnosis of Serous Meningitis and Brain Tumor. A. Ceconi.
124 Peptone Injections in Treatment of Hemorrhagic Tendency. (A proposito di uno stato emorragiparo grave e sulla terapia colle iniezioni di peptone.) F. Perussia.

June 18, No. 73, pp. 769-776

125 Identity of Cow-Pox and Small-Pox. (Le piu recenti constatazioni sulla unicita del vaiolo-vaccino.) E. Bertarelli.

June 20, No. 74, pp. 777-784

126 Epidemiology of Cholera. (Il colera nel territorio padovano e nel Polesine.) M. Vivaldi.

June 23, No. 75, pp. 785-800

127 Extensive Quinin Prophylaxis. (Chinizzazione profilattica universale e chinizzazione degli ex-malarici.) E. Bertarelli.
128 Pseudotumors in the Intestines. (Pseudotumori intestinali di origine fecale.) G. Mann.

Policlinico, Rome

June 9, XIX, No. 24, pp. 857-892

129 *Intramuscular Injection of Ether for General Anesthesia. (L'anestesia generale per mezzo di iniezioni intramuscolari di etere.) E. Lay.

June 16, No. 25, pp. 894-928

130 *Chagas' Trypanosomiasis. (Il morbo di Carlo Chagas o tiroidite parassitaria.) C. Basile.
131 Intravenous Injection of Strophanthin in Typhoid and in Valvular Disease. (Buoni effetti terapeutici delle iniezioni intravenose di strofantina.) L. Meoni.

June, Surgical Section No. 6, pp. 241-288

132 Streptococcus Responsible for Erysipelas. (Possono altri germi, indipendentemente dallo streptococco, indurre eresipela?) A. Poggiolini.
133 Experimental Transplantation of Ureter and Vas Deferens. (Ricerche sperimentali sui traplanti di vasi in uretere e di uretere nei vasi e sull'anastomosi uretero-deferenziale.) A. Chiasserini.

June, Medical Section No. 6, pp. 239-286

134 The Blood in Experimental Jaundice. (Osservazioni ematologiche nella colemia sperimentale.) C. F. Zanelli.
135 Case of Verrucous Aortitis. S. D'Antona.
136 The Organic Fluids in Cholera. (Valori fisico-chimici di liquidi organici di colerosi.) E. Calcaterra and A. Connio.
137 Reaction in Milk Specific for Malta Fever. (Sulla lattoreazione per il micrococco melitense.) C. Cantieri.

129. **General Anesthesia by Intramuscular Injection of Ether.**—Lay reports two cases in which he removed a cancer of the face under general anesthesia from intramuscular injection of ether. The conditions thus provided for the operation were exceptionally favorable. He extols the harmlessness and the superiority of the technic for operations on the head. He injected 70 c.c., the two women weighing 57 and 78 kilograms. The patients slept on after the operation for about an hour. The points where the ether had been injected were slightly painful for two and five days and in one case there was ecchymosis. Both patients had slight transient hemoglobinuria the second day afterward. [See Paris Letter in THE JOURNAL, May 25, 1912, p. 1612.]

130. **Chagas' Disease.**—Basile reviews what has been published to date on the trypanosomiasis or parasitic thyroiditis caused by the *Schizotrypanum cruzi*, the parasite first described by Chagas. [The disease was mentioned editorially in THE JOURNAL, 1910, lv, 603.]

Riforma Medica, Naples

June 8, XXVIII, No. 23, pp. 617-644

138 Cavity in the Spinal Cord Resulting from Pressure on the Medulla Oblongata. (Caso di cavita midollare consecutiva a compressione bulbare nell' uomo. Studio sperimentale delle cavita spinali da compressione.) J. Lhermitte and P. Boveri.

139 Abdominal Contusions with Subcutaneous Rupture of the Wall. (Le contusioni dell'addome con rottura sottocutanea della parete.) M. Dardanelli. Commenced in No. 20.

140 Experimental Traumatic Femoral Aneurysm. (Aneurisma traumatico ottenuto sperimentalmente.) A. Pignatti.

June 15, No. 24, pp. 645-672

141 Compound of Quinin and Urethan. (Sulla unione del cloridrato basico di chinina all'uretano.) P. Marfori.

142 *Malta Fever in Infants. (Febbre mediterranea nei lattanti.) F. Luna.

143 *Artificial Pneumothorax in Treatment of Pulmonary Tuberculosis. (Sulla cura della tubercolosi polmonare col pneumotorace artificiale.) M. Ferretti.

142. **Malta Fever in Infants.**—Luna reports three cases of Malta fever in infants from one to two years old, and suggests that possibly it is more common in young children than hitherto recognized. Long, irregular febrile affections in infants may perhaps be due to the Bruce micrococcus in certain unsuspected cases. Agglutination was early and very pronounced in his cases, and the children recovered in less than two months in the two cases traced after the first visit. No characteristic blood findings were noted in the infants.

143. **Artificial Pneumothorax for Pulmonary Tuberculosis.**—Ferretti gives the complete details of his five cases, adding that the technic of the method is extremely simple and the by-effects are insignificant. The action was most favorable on the expectoration and tendency to hemorrhage. The method is applicable only when the tuberculosis is restricted to one side and the pleura is free from adhesions and only a small number of patients present these conditions. Subcutaneous emphysema is liable to follow the injection but this is rapidly reabsorbed; aside from this, he has witnessed no inconveniences from the method.

Brazil-Medico, Rio de Janeiro

June 8, XXVI, No. 22, pp. 217-228

144 Advisability of Introducing Vaccination Against Typhoid. U. Paranhos.

Semana Medica, Buenos Aires

May 30, XIX, No. 22, pp. 1001-1044

145 Foreign Bodies in the Esophagus or Bronchi. (Algunas consideraciones sobre dos casos interesantes de cuerpos extraños del esofago y del bronquio derecho, extraidos por la via natural por medio de la endoscopia.) E. Botella.

146 Reflex Sign of Irritation of the Peritoneum. (La semi-ereccion del penis como signo casi constante de reaccion peritoneal.) N. L. Gross.

Hospitalstidende, Copenhagen

June 19, LV, No. 25, pp. 701-736

147 Little if any Danger from Sulphur Used in Milling Cereals. (Om svovlpræparerede Gryn som Aarsag til Forgiftning.) K. Schroeder.

June 26, No. 26, pp. 737-760

148 Metabolism in Delirium Tremens. (Nogle Stofskifteforhold ved Delirium tremens.) G. E. Schrøder.

Hygiea, Stockholm

May, LXXIV, No. 5, pp. 481-624

149 Principles for Treatment of Cripples. (Några riktlinjer för vanförevården.) P. Haglund.

150 Operative Treatment of Chronic Suppuration of the Middle Ear. (Den kroniska otorrens kirurgiska behandling.) E. Stangenberg.

151 Development of Fetus Outside of the Membranes. (Om hafvandeskap utanför hinnorna—Graviditas extramembranacea.) K. Lewenhagen.

Nordiskt medicinskt Arkiv, Stockholm

XLIV, Internal Medicine No. 3. Last indexed Feb. 24, p. 600

152 *Albuminuria After Severe Physical Exercise. (Die Anstrengungsalbuminuria. Eine Studie über die Einwirkung maximaler Körperanstrengung—des Sports und des Trainings—auf die Nieren.) I. Jundell and K. A. E. Fries. Commenced in No. 1.

153 Hydrochloric Acid in Nephritis. (Zum Studium des Verhaltens der Salzsäure im Magensaft bei Nierenentzündungen.) C. Sebardt. To be continued.

Internal Medicine No. 4

154 Twin Monster Without a Heart. (Ueber Acardie. Zur Frage von den Zwillingsmissgeburten.) C. J. Heljl. To be continued.

155 *Local Treatment of Tuberculous and Other Infectious Processes with Combined Action of Sodium Iodid and Ozone. (Kausuistik zur Behandlung lokalinfektiöser Prozesse mit Jodnatrium und Ozon, bezw. Wasserstoffsuperoxyd.) S. A. Pfannenstill.

152. **Athletics and Transient Albuminuria.**—The conclusions of Jundell and Fries' research were given in THE JOURNAL, Nov. 25, 1911, p. 1810. This final installment gives tables of the special findings in the 265 persons examined. The tests were made mostly on athletes competing in races or great games or preparing for such. The material is further classified according to the nature of the sport.

155. **Two-Route Treatment of Local Infectious Processes.**—The principles on which this treatment is based were given in THE JOURNAL, July 16, 1910, p. 264. By taking the iodid internally and applying ozone to the lesion, nascent iodin is generated in the tissues of the lesion. Pfannenstill gives the ultimate history of some of his early patients thus treated, the outcome encouraging further application of the method.

Ugeskrift for Laeger, Copenhagen

June 13, LXXIV, No. 24, pp. 889-926

156 *Pyuria in Children. (Erfaringer om Pyuri hos Børn.) A. H. Meyer.

June 20, No. 25, pp. 927-956

157 *Rectoscopy and Sigmoidoscopy. (Om Rekto-Romanoskopi.) Kramer-Petersen.

156. **Pyuria in Children.**—Meyer has encountered pyuria in twenty-eight young infants, in seventeen between 1 and 2 years old, and in twenty-three children older than this, a total of sixty-eight cases; 70.6 per cent. of the patients were girls and in forty-seven cases the kidneys were involved. In thirty-eight cases the colon bacillus was found in pure cultures; in forty-four cases the primary trouble was enteritis. He states further that pyuria was encountered in 25 or 30 per cent. of all his cases of cholerine; in two of the pyuria cases there had been a preceding infectious sore throat; in another case measles. The bacilli found in the cholerine pyuria cases were the same as those found in the stools. Nine of the children died; thirty entirely recovered but nineteen still had pyuria when they left the hospital, one nephritis and nine still had bacteria in the urine. Recent reexamination of fifty-six showed that two still had chronic pyuria, one bacteriuria, one nephritis; four had succumbed to the urinary affection and seven to intercurrent disease; forty were healthy. The experiences related confirm anew the dependence of the urinary affection on primary intestinal disease. Conditions in the urinary organs return to normal sooner or later, with or without treatment, after the intestinal process has healed. The aim in treatment therefore should be to discover and cure the primary affection. Copious ingestion of boiled or distilled water is invaluable; it can be given by the stomach tube or in enemas if the child refuses to drink. Meyer is rather skeptical as to the efficacy of hexamethylenamin and vaccine therapy; only eight of the twenty-two patients treated with the former were cured at the time and six recovered later. Of the seven treated with vaccine therapy, three were uncured; two others given hexamethylenamin in addition recovered.

157. **Proctoscopy.**—Petersen reviews his experience with direct visual inspection of the rectum and sigmoid flexure and emphasizes the clinical importance of proctoscopy. He describes the various findings liable to be encountered and their interpretation, citing some typical examples, and insists that proctoscopy should be applied to every patient who has pain or tenesmus in the lowest bowel unless they can be explained by hemorrhoids or a fissure. In order to discover incipient cancer, direct local inspection should be the routine procedure for every patient with obstinate rebellious diarrhea and those with intestinal obstruction developing suddenly or in the course of a few weeks, and which does not yield to ordinary treatment. Also for patients with blood, mucus or pus in the stools when digital examination is negative. By heeding this advice and systematically endoscoping these three classes of patients, we will be saved many tragic surprises later.